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2. 协议英文版中所有大写专有名词，中文译文以斜体表示。

**MEMORANDUM OF AGREEMENT (MOA)**

**AMONG**

**THE QINDAO NATIONAL LABORATORY FOR MARINE SCIENCE AND  
TECHNOLOGY, QINGDAO, CHINA**

**AND**

**TEXAS A&M UNIVERSITY, COLLEGE STATION TEXAS**

**AND**

**THE UNIVERSITY CORPORATION FOR ATMOSPHERIC RESEARCH acting on  
behalf of  
THE NATIONAL CENTER FOR ATMOSPHERIC RESEARCH, BOULDER,  
COLORADO**

**FOR**

**THE ESTABLISHMENT OF THE INTERNATIONAL LABORATORY FOR HIGH  
RESOLUTION EARTH SYSTEM PREDICTION (iHESP)**

青岛海洋科学与技术国家实验室（中国·青岛）

德州农工大学（美国·德克萨斯州·大学城）

美国大气研究大学联盟代表国家大气研究中心（美国·科罗拉多州·博尔德市）

关于建立“国际高分辨率地球系统预测实验室（iHESP）”的

协议备忘录

## 1. PARTIES AND PURPOSE

### 签约各方及合作目的

This Memorandum of Agreement (MOA) is a trilateral agreement among **Qingdao National Laboratory for Marine Science and Technology Development Center (QNLMD Development Center)**, a public institution incorporated under the Qingdao Municipal Government, China with business registration number 123702005912957867 as an agent and operator for the Qingdao National Laboratory for Marine Science and Technology, of No. 1 Wenhai Road, Aoshanwei Town, Jimo, Qingdao, China; **Texas A&M University (TAMU)**, an institution of higher education and a member of The Texas A&M University System (TAMUS) and agency of the State of Texas, located in College Station, Texas, United States of America; and the **National Center for Atmospheric Research (NCAR)**, a federally funded research and development center managed by the **University Corporation for Atmospheric Research (UCAR)**, a nonprofit corporation devoted to service, research and education in the atmospheric and related sciences, located in Boulder, Colorado, United States of America. QNLMD, TAMU and UCAR/NCAR will be identified individually as "Party" and on a collective basis as "Parties." The purpose of this MOA is to authorize and establish the **International Laboratory for High Resolution Earth System Prediction (iHESP)** including the development and implementation of iHESP to attain the overall Parties' objectives as identified in this MOA.

本协议备忘录 (MOA) 由三方签署, 签约各方为: 青岛海洋科学与技术国家实验室发展中心 (QNLMD Development Center), 青岛市政府所属事业单位, 事业单位代码为123702005912957867, 代理并运营青岛海洋科学与技术国家实验室, 位于中国青岛市即墨区鳌山卫镇问海路1号; 德州农工大学 (TAMU), 高等教育院校, 德州农工大学系统 (TAMUS) 成员, 德克萨斯州公立高校, 位于美利坚合众国德克萨斯州大学城; 国家大气研究中心 (NCAR), 联邦资助的研发中心之一, 由大气研究大学联盟 (UCAR) 管理。UCAR为非盈利联盟, 致力于大气科学及相关领域的服务、研究与教育工作, 位于美利坚合众国科罗拉多州博尔德市。QNLMD、TAMU和UCAR/NCAR在本文中称为签约方或签约各方。本协议备忘录的目的是授权和建立国际高分辨率地球系统模拟实验室 (iHESP) 及其发展和运行, 以达到协议备忘录中签约各方的总目标。

## 2. BACKGROUND

### 背景

Climate variations from subseasonal-to-decadal (s2D) timescales modulate the likelihood and intensity of extreme weather such as tropical cyclones, heat waves, winter storms and floods, as well as coastal sea-level rise and marine ecosystems shift, which have been associated with increases in human morbidity and mortality rates; severe impacts on agriculture, energy use, industrial activity and coastal sustainability; and economic costs in the billions of dollars. As such, developing the capability of predicting s2D climate variability would yield enormous social, economic, and environmental benefits, making it an extremely valuable tool for

policymakers and stakeholders. There is an increasing demand for climate prediction information on regional scales at high spatial resolutions by policy makers and stakeholders. There is also an increasing demand for predictive information about biogeochemical cycles and ecosystem changes at regional scales with high spatial resolutions. Yet such information is rarely available, because the current generation of climate and earth system models used for s2D predictions do not possess sufficient spatial resolutions to address regional scale problems. There is an urgent need to develop a high-resolution multiscale Earth System prediction framework capable of providing reliable information at both global and regional scales. The Parties will collaborate within the framework of the iHESP to develop a new advanced modeling framework for high-resolution (HR) regional and global earth system predictions at s2D time scales. The iHESP focus includes research and development for HR Earth System model and key modeling technologies including large-scale high-efficiency parallel technology, data assimilation technology, visualization, big data formation and mining.

次季节至年代际尺度（s2D）的气候变异影响着热带气旋、热浪、冬季风暴、洪涝等极端天气事件，及海岸海平面上升和海洋生态系统变化。这些事件导致人类疾病率及死亡率上升，严重影响农业、能源使用、工业活动及海岸可持续发展，造成的经济损失达几十亿美元。因此，加强对s2D气候变异的预测能力，将产生巨大的社会、经济及环境效益，为决策者和利益相关方提供有力支持。决策者和利益相关方对高分辨率区域预测信息的需求与日俱增，不论在气候领域、地球生物化学圈，还是在生态系统变化领域都是如此。目前s2D预测使用的气候与地球系统模型由于空间分辨率不足，难以解决区域尺度问题，相关预测信息较为匮乏。因此，目前急需开发高分辨率地球系统预测框架，在全球及区域尺度上提供可靠信息。签约各方将在iHESP框架下，共同开发新一代的先进模拟框架，用于s2D尺度的区域与全球地球系统预测。iHESP将聚焦于研究高分辨率地球系统模式研发，以及大规模高效并行技术、数据同化、可视化、大数据形成、挖掘等关键模拟技术。

### 3. OBJECTIVES

#### 目标

The overarching objective of iHESP is to accelerate efforts in: 1) HR ocean and earth system model development, 2) HR ocean and earth system simulation and prediction and 3) advanced scientific understanding of multiscale interactions within the earth system.

iHESP的首要目标是加强以下工作：1) 开发高分辨率海洋及地球系统模型，2) 实施高分辨率海洋及地球系统模拟和预测以及，3) 推进对地球系统内部多尺度相互作用的科学认识。

The specific science goals of iHESP for the next five (5) years are as follows:

iHESP 今后五年的科学目标如下：

**3.1 Assess and quantify the role of mesoscale ocean eddies and their interactions with the**

atmosphere and sea-ice in climate variability/change and climate predictability/prediction by carrying out an unprecedented ensemble of present and future climate simulations at eddy-permitting / -resolving and tropical cyclone (TC)-permitting resolutions in the ocean and atmosphere, respectively;

首次实现海洋中尺度涡及热带气旋分辨率尺度的气候现状集合反演和变化预测，评估和量化中尺度涡及其与大气和海冰相互作用对气候变异/变化、气候预测/可预测性的影响。

**3.2 Develop a new advanced modeling framework for high-resolution regional and global earth system predictions at s2D time scales by focusing on:**

为s2D尺度高分辨率全球和区域地球系统预测开发新一代的先进模拟框架，聚焦：

**3.2.1. Improving or/and replacing the ocean component of the existing earth system model with a new ocean model that has improved upper ocean mixing processes, including surface wave and tidal effects, as well as other unresolved small-scale dynamics,**

优化现有地球系统模型中的海洋模块，或用改进上层海洋混合过程的海洋模块更换现有地球系统模式中的海洋模块，包括改进表面波和潮汐效应以及其他未解决的小尺度动力学。

**3.2.2. Developing a new online coupled data assimilation capability for high-resolution regional and global earth system models, and**

为区域和全球高分辨率地球系统模型开发新型在线耦合数据同化能力。

**3.2.3. Enhancing Community Earth System Model (CESM) coupling software framework by developing a set of online nesting tools for dynamical downscaling through nesting of regional CESM within global CESM.**

开发在线嵌入工具，实现全球CESM模型与区域CESM模型动态降尺度嵌套，改进CESM耦合软件框架。

The iHESP model development activity should focus on assessing and improving the existing or developing a new integrated earth system model. Component model development should be the responsibility and objective of the individual Parties involved. The research within iHESP should focus on integrating these components into the CESM with the goal of developing a more advanced earth system model for s2D prediction.

iHESP模型开发应聚焦于评价、优化现有地球系统模型，或开发新型综合地球系统模型。模型分量应该是相关签约方各自的职责及目标。iHESP的研究应该聚焦于将这些分量融入CESM中，从而为s2D尺度上的预测开发出更加先进的地球系统模型。

## 4. iHESP FRAMEWORK

### iHESP 框架

4.1 The iHESP will establish a laboratory at TAMU with sub-offices at QNLM. The sub-office will consist of office and research facilities. TAMU will provide the director office. Workspace and space for visitors will also be made available at QNLM and NCAR.

iHESP 将在 TAMU 建立实验室，在 QNLM 设立分部，包括办公室和设备。TAMU 将提供主任办公室。QNLM 及 NCAR 将提供办公场所，并为访问者提供场地。

4.2 The Parties agree to collaborate on discrete projects. Each of those projects will be the subject of a separate and specific Project Agreement (PA). Any items set out in a PA will not vary the terms of this MOA unless specifically stated in the PA. Projects will be approved by the iHESP Steering Committee, implemented by a project lead, and coordinated by the iHESP Director.

签约各方同意进行项目合作。将围绕每个项目分别签署项目协议（PA）。PA 中如无明确说明，PA 的任何条目均不改变本 MOA 条款。项目将由 iHESP 管理委员会审批，由项目负责人执行，由 iHESP 主任进行协调。

4.3 For the purposes of this MOA and each PA, Parties' personnel (including students, if any) attending other collaborative facilities must adhere to the host entities policies, regulations, rules and procedures. Examples could include (but not be limited to): security and access to the site; health and safety of any person; use of any equipment, materials or facilities or; use of any computer, electronic or telecommunications device, software, databases or on-line services; and export control requirements.

在执行本 MOA 及 PA 过程中，一方人员（包括学生）如果使用其他签约方的设备，则必须遵守该机构的政策、规章制度及程序安排，包括但不限于以下方面：场地安全及准入；人员安全与健康；器材、材料或设备的使用；计算机、电子或通讯设备、软件、数据库或在线服务的使用；出口管制要求。

4.4 Access to QNLM High Performance Computing Center (HPC) is subject to relevant laws of P.R. China, QNLM rules and regulations and HPC application and usage regulations. Facility users must not engage in any activity that violates the export control laws of P.R. China. Facility users must acknowledge that HPC has foreign national personnel, employees and students (hereinafter referenced as "facility staff") working on site at the facility. Facility users agree not to direct facility staff to generate export controlled data or create or develop any export controlled item pursuant to any research, service, or fabrication activity intended under this MOA.

使用 QNLM 高性能科学计算与系统仿真平台（HPC）必须遵守中华人民共和国相关法律、QNLM 相关规章制度以及 HPC 申请及使用规范。设备使用方不得违反中国出口管制法律。设备使用方承认，外籍人员、雇员及学生（后称“设备职员”）在设备场地工作。

设备使用方同意，不以本 MOA 下的研究、服务或制造活动为由，命令设备职员生成受出口管制的数据，或者制造受出口管制的物品。

**4.5** Access to Texas A&M High Performance Research Computing (HPRC) is subject to the relevant Texas state laws and Texas A&M University (TAMU) rules and regulations and HPRC usage policies/acceptable use statement. Facility users must not engage in any activity that violates the export control laws of the United States (U.S.). Facility users must acknowledge that HPRC has foreign national personnel, employees and students (hereinafter referenced as “facility staff”) working on site at the facility. Facility users must agree not to direct facility staff to generate export controlled data or create or develop any export controlled item pursuant to any research, service, or fabrication activity intended under this MOA.

使用德州农工大学高性能研究计算设备（HPRC）必须遵守德克萨斯州的相关法律、德州农工大学（TAMU）相关规章制度以及 HPRC 使用政策/使用声明。设备使用方不得违反美国出口管制相关法律。设备使用方承认，外籍人员、雇员及学生（后称“设备职员”）在设备场地工作。设备使用方同意，不以本 MOA 下的研究、服务或制造活动为由，命令设备职员生成受出口管制的数据，或制造受出口管制的物品。

**4.6** Access to NCAR supercomputing resources is subject to NCAR allocation procedures and eligibility requirements as approved by the National Science Foundation (NSF) and is, in part, conditional on users receiving funding from NSF to support their research efforts.

使用 NCAR 超级计算资源须遵循 NCAR 分配程序以及美国国家科学基金会（NSF）的审批要求。如果使用方接受 NSF 的研究经费支持，则需要满足特定的使用条件。

**4.7** Student involvement in PAs require that Party engaged with a student enter into a written agreement with the student to identify the students’ role in a specific PA. Participating in specific TAMU research projects are subject to TAMUS policies and regulations as it pertains to copyright control of their thesis or dissertations.

PA 中如果有学生参与，相关签约方须与该学生签订书面协议，在具体的 PA 中规定学生的职责。出于对学生论文版权管控的考虑，参与 TAMU 研究项目的学生应遵循 TAMUS 的政策规章。

## **5. GOVERNANCE**

### **管理**

**5.1** The iHESP will be managed through a governance structure comprised of a Steering Committee (SC), a Scientific Advisory Board (SAC) and a Laboratory Director.

iHESP 的管理架构包括：*管理委员会（SC）、科学咨询委员会（SAC）以及实验室主任。*

**5.2** The SC will be composed of seven (7) members: two (2) representatives each from QNLM, TAMU, and NCAR. SC members are appointed by their institution. The SC will be chaired

by an independent non-Parties. Selection of the SC chair will be through consensus of the Parties. The SC is responsible for review and selection of the five (5)-year scientific plan, annual work plan, approval of the annual budget and the appointment of the Laboratory Director. The SC will make decision through consensus. The chair coordinates the SC meeting and mediates if disagreement arises.

SC 由 7 名成员构成：QNLN、TAMU 及 NCAR 每方各派两名代表。SC 主席将由来自外部独立机构的人员担任。签约方通过协商一致的方式选任 SC 主席。SC 负责审议 iHESP 五年科学计划、年度工作计划，批准年度预算以及任命实验室主任。SC 通过协商一致的方式形成决议。主席负责组织 SC 会议，协调分歧。

**5.3 The SAC provides advice to the SC concerning the scientific elements of the program. The SAC is composed 4-8 external (non-Parties) members, including experts from relevant research fields and representatives from prestigious research institutions. All SAC members shall be agreed upon by the SC. One member shall take the role of chair, responsible for coordinating SAC meetings. The SAC chair will be appointed by the SC and will serve a three (3) year term. This term can be renewed pending approval of the SC.**

SAC 为 SC 提供科学层面的建议。SAC 由 4-8 名外部（签约各方以外）成员构成，包括相关领域专家及知名机构代表。SC 任命 SAC 成员。其中一名成员担任主席，负责组织 SAC 会议。SAC 主席由 SC 任命，任期三年，可以连任。

**5.4 The Laboratory Director is responsible for iHESP operations. The Laboratory Director will be a TAMU employee. The appointment of the Laboratory Director requires approval of the SC as iHESP decision-making organization and requires the consent of TAMU as the physical hiring entity of this position. The Laboratory Director responsibilities include, but are not limited to:**

实验室主任负责 iHESP 运行。实验室主任是 TAMU 雇员。任命实验室主任需要作为 iHESP 决策机构的 SC 审批，同时需要征得实际聘任方 TAMU 的同意。实验室主任职责包括但不限于：

**5.4.1 Day-to-day management of iHESP including personnel, fiscal elements, and project deliverables.**

iHESP 日常管理，包括人员、财务及项目成果。

**5.4.2 Preparation and presentation of the five (5) year strategic plan, annual program with budget(s) in an agreed on format to the SC for approval.**

筹备五年战略规划、年度计划及预算（须符合商定格式），并提交 SC 审批。

**5.4.3 Preparation and submission of both quarterly and annual reports to the SC and an annual report to the SAC. The annual report is submitted no later than the 31 December for the specific year of operations.**

筹备并向 SC 提交季度及年度报告，向 SAC 提交年度报告。每年 12 月 31 日前提交年度报告。

**5.4.4 Guiding the development of project details for new PAs and presentation of new projects to the SC for approval.**

指导编写项目细则以完成新的 PA，并将新项目提交 SC 审批。

**5.4.5 Development of a communication plan for approval by the SC.**

编制宣传计划，提交 SC 审批。

**5.4.6 Retaining copies of all approved PAs and maintain registers of projects performed, all intellectual property contributed/developed under a PA, and all identified confidential information.**

保存所有获批 PA 的副本。对已执行项目、PA 下提供或开发的知识产权、明确的保密信息，保存所有相关记录。

**5.4.7 Ensuring appropriate communications with SC, SAC, and project leads.**

保证 SC、SAC 与项目负责人之间信息畅通。

**5.4.8 Assisting preparation of funding proposals in China and U.S. relevant to and for the growth of iHESP, as required by the Parties; and**

应签约方要求，在中国及美国协助与 iHESP 相关或对 iHESP 有益的经费申请。

**5.4.9 Coordinating with the SAC and SC chairs to ensure that appropriate materials are available for the SAC/SC to provide necessary scientific advice.**

与 SAC 主席、SC 主席沟通，保证 SAC/SC 可以获得相关资料，以便提供必要的科学建议。

## **6. COMMITMENTS**

### **承诺**

**6.1** The term of this MOA (“Term”) is for five (5) years from the date this MOA is executed (“Commencement Date”) by the Parties subject to annual funding. This MOA will become effective when signed by all Parties. Renewal of this MOA will be considered by the Parties following a year four (4) iHESP review and assessment.



本MOA期限（*协议期*）为五年，从本MOA执行之日（*生效日*）算起，受年度资金制约。本MOA将在签约方签署后生效。在协议期第四年对iHESP进行评审后，*签约各方*将考虑本MOA的更新事宜。

## **6.2 QNLM will during the Term of this MOA:**

在本MOA协议期内，QNLM将：

**6.2.1** Provide TAMU the fees of \$2,000,000 (“Fee”) in U.S. dollars no later than 31 January of each year for five years to conduct projects and to operate the iHESP;

在5年内，每年1月31日前向TAMU提供2,000,000美元（“*经费*”）用于支持项目实施及iHESP运行。

**6.2.2** Provide access to the QNLM high performance computer (HPC) systems with 10 penta bytes of data storage and provide necessary HPC resources to complete the deliverables for iHESP efforts;

为iHESP工作提供QNLM高性能科学计算与系统仿真平台（HPC）访问权，包括10 penta bytes 的数据存储。为保证iHESP完成目标提供必要的超算资源。

**6.2.3** Bear and pay (without diminishing the amount of the Fee to be paid to TAMU) all Chinese taxes, deductions and withholdings to the relevant authorities in China in connection with the Fee and to separately pay enough to ensure that TAMU receives the full amounts due under this MOA on the relevant due date.

承担并向中国相关机构缴纳（在不减少TAMU经费的前提下）与经费相关的所有中方税款、扣除额及预扣税款，向TAMU支付足够费用，以保证TAMU按照本MOA规定按时收到全款。

**6.2.4** Provide appropriately qualified research and support staff for the conduct of the projects, which may be conducted at the TAMU facilities or elsewhere as appropriate.

为项目实施提供合格的研究人员与管理人員。项目可以在TAMU的设施上进行，也可以在其他合适的场所进行。

## **6.3 TAMU will during the Term of this MOA:**

在本MOA协议期内，TAMU将：

**6.3.1** Contribute \$2,000,000 in U.S. dollars for the iHESP yearly for five (5) years, which is equal to the Fee provided by QNLM for iHESP. The TAMU contribution will be through in kind and cash contributions.

在五年内，每年向iHESP提供2,000,000美元，对应QNLM向iHESP提供的经费。TAMU出资将通过实物出资与资金出资两种形式实现。

**6.3.2 Provide iHESP facilities including “store front” space with offices, conference facilities, meeting rooms, and visiting scientist space that can accommodate the iHESP staff and with access to the TAMU HPC system (to the extent permitted by U.S. export control laws).**

为 iHESP 提供设施，提供“店面式”办公场所，附带办公室、会议设施、会议室、访问科学家场地，可供 iHESP 人员使用。（在美国出口管制法许可范围内）提供 TAMU 高性能计算系统访问权。

**6.3.3 Provide appropriately qualified research and support staff for the conduct of the projects, which may be conducted at the TAMU facilities or elsewhere as appropriate**

为保证项目实施，提供合格的研究人员与管理人員。项目可以在 TAMU 的设施上进行，也可以在其他合适的场所进行。

**6.3.4 Bear and pay all U.S. taxes, deductions and withholdings to the relevant authorities in the U.S. in connection with the Fee.**

承担并向美国相关机构缴纳所有与经费相关的美国税款、扣除额及预扣税款。

**6.3.5 Provide 20,000,000 TAMU HPC CPU hours for use yearly by iHESP.**

在五年内，每年向 iHESP 提供超算资源 20,000,000 计算机时。

**6.4 NCAR will during the Term of this MOA (subject to receiving funding through PAs):**

NCAR将在本MOA协议期内（通过PA获得费用）履行以下承诺：

**6.4.1 Provide a high-resolution version of the Community Earth System Model (CESM-HR).**

提供高分辨率版本的共同体地球系统模型（CESM-HR）。

**6.4.2 Provide expert software engineering and science assistance to advance the goals and capabilities of iHESP.**

为推进 iHESP 目标，提升 iHESP 能力，提供专业软件工程支持及其他科学支持。

**6.4.3 Provide qualified scientist and support staff to direct and perform research to accomplish the scientific objectives of iHESP.**

为保证 iHESP 科学目标的实现，提供合格的科学家及技术支撑人员，指导并实施研究工作。

**6.4.4** Provide help with code optimization, model setup with scripts, compiler options, and required software changes (infrastructure), testing, and diagnostics capabilities.

在代码优化、模型脚本设置、编译程序选项、必要软件整改（基础结构）、试验、诊断能力方面提供帮助。

**6.4.5** Host short- and long-term visits by students, post-docs, and scientists from TAMU and QNLM; and, provide related office space.

接待 TAMU 及 QNLM 的学生、博士后及科学家的短期及长期访问，提供相应的办公场所。

**6.4.6** This MOA does not bind or purport to bind the U.S. Government or the National Science Foundation (NSF), an independent agency of the U.S. Government. Consequently, any claims or disputes arising from or in performance of this MOA shall solely be between the Parties of this MOA and no others.

本协议备忘录对美国政府或美国国家科学基金会没有约束力。因此，与本协议备忘录相关的任何纠纷仅与签约各方相关，与其他方无关。

**6.5** The unexpended amount of the Fee would be carried over to the next year after SC approved. Such amounts should be identified in the financial accounts and financial report of the iHESP.

经 SC 审批，可将结余经费结转到次年度使用。此结余经费应在 iHESP 财务账目及财务报告中进行清楚说明。

## **7. GUIDING PRINCIPLES OF iHESP** **iHESP 指导原则**

**7.1** The Parties (or any subset of the Parties) will enter into PAs and/or other agreements as may be needed that shall provide more specific obligations and terms associated with such understandings consistent with the following guiding principles of iHESP unless otherwise mutually agreed upon:

签约各方（或签约各方的任何下属机构）将视需要签署 PA 及/或其他协议，这些协议将规定与本备忘录相关的具体义务及条款。除非各方同意另做安排，所有协议内容遵从以下 iHESP 指导原则：

**7.1.1** Intellectual Property (IP) shall be the property of the Party developing, creating, or inventing such IP. Ownership of IP jointly developed, created, or invented by TAMU, QNLM, and/or NCAR will be jointly owned by the developing Parties provided that such IP is not derived from and does not include or infringe upon the background IP of one of the Parties; such joint ownership shall be equal and undivided unless specified otherwise in a PA. Rights to another Party's background IP shall be addressed in PAs and/or other

agreements (e.g., licenses). It is understood and acknowledged by the Parties that any such rights shall be granted solely for non-commercial research or educational purposes in the performance of a PA.

知识产权 (IP) 属于开发、创造或发明该 IP 的一方。由 TAMU、QNLN 和/或 NCAR 共同开发、创造或发明的 IP, 为开发几方共同所有, 但须满足以下条件: 此 IP 不是由任意一方的背景知识产权派生而来, 且不包括或侵犯任意一方的背景知识产权。除非在 PA 中另做规定, 上述 IP 的共同所有权是平等且不可分的。一方对另一方背景知识产权的权力应在 PA 及/或其他协议 (例如: 许可) 中进行规定。签约各方理解并承认, 上述有关背景知识产权的规定仅在 PA 实施期间适用于非商业的研究或教育目的。

**7.1.2 IP resulting from PAs will be made publicly available. CESM model release(s) shall be in accordance with the CESM license and consistent with the CESM release policy at the time of model release. Non-CESM model releases shall be in accordance with the model developer's own policy.**

将公开 PA 下开发的 IP。发布 CESM 模型, 须在发布时遵循 CESM 许可及 CESM 发布政策。发布其他模型须遵守模型开发方的政策。

**7.1.3 Confidential information shall not be used in the development of IP resulting from PAs.**

保密信息不能用于与 PA 相关的 IP 开发。

**7.2 Unless otherwise agreed upon in a PA, the Parties agree that intellectual property developed under a PA will be made publicly available and therefore will not be commercialized**

除非在 PA 中另做规定, 签约各方同意公开 PA 下开发的知识产权, 因而不会对此类知识产权进行商业化操作。

## **8. DATA** 数据

**8.1 All data, outcomes and/or results developed jointly will be for non-license access.**

将公开共同开发的数据、产出及/或结果, 无须获取许可即可访问。

## **9. EXPORT CONTROL** 出口管制

**9.1 It is understood that TAMU and NCAR are subject to U.S. laws and regulations controlling the export of technical data, computer software, laboratory prototypes and other commodities and that its obligations hereunder are contingent on compliance with applicable U.S. export laws and regulations. It is the expectation of TAMU and NCAR that the work done pursuant**

to this MOA and any PA will constitute fundamental research and be exempt from export control licensing requirements under the applicable export control laws and regulations. TAMU and NCAR do not wish to take receipt of export-controlled information except as may be knowingly and expressly agreed to in writing signed by an authorized representative of TAMU and/or NCAR and for which the entity has made specific arrangements. QNLM agrees that it will not provide or make accessible to TAMU and/or NCAR any export-controlled materials (including, without limitation, equipment, information and/or data) without first informing entities of the export-controlled nature of the materials and obtaining prior written consent to accept such materials as well as any specific instructions regarding the mechanism pursuant to which such materials should be passed to TAMU and/or NCAR.

TAMU 及 NCAR 须遵守美国出口管制相关法规，相关法规涉及领域包括：技术数据、计算机软件、实验室技术原型等。履行后续义务将取决于对美国出口法规的遵守情况。TAMU 和 NCAR 认为，本 MOA 及所有 PA 的相关工作属于基础研究的范畴，依照美国的适用出口管制法规，无须履行出口管制许可程序。TAMU 和 NCAR 不希望接收出口管制的信息，除非由 TAMU 及/或 NCAR 的授权代表以书面形式明确同意，并提前筹备安排。如果 QNLM 未事先告知对方某材料属于出口管制范畴，未取得对方书面同意，未提供传送该材料的有关说明，QNLM 不得向 TAMU 和/或 NCAR 提供或对其公开受出口管制的材料（包括但不限于，设备、信息和/或数据）。

9.2 It is understood that QNLM is subject to laws and regulations of P.R. China relevant to export control. It is the expectation of QNLM that the work done pursuant to this MOA and any PA will be exempt from export control licensing requirements under the applicable export control laws and regulations. QNLM does not wish to take receipt of export-controlled information except as may be knowingly and expressly agreed to in writing signed by an authorized representative of QNLM and for which the entity has made specific arrangements. TAMU and/or NCAR agree that it will not provide or make accessible to QNLM any export-controlled materials (including, without limitation, equipment, information and/or data) without first informing entities of the export-controlled nature of the materials and obtaining prior written consent to accept such materials as well as any specific instructions regarding the mechanism pursuant to which such materials should be passed to QNLM.

QNLM 须遵守中华人民共和国出口管制相关法规。QNLM 认为，本 MOA 及所有 PA 的相关工作属于基础研究范畴，依据适用的出口管制法规，无须履行出口管制许可程序。QNLM 不希望接收出口管制的信息，除非由 QNLM 的授权代表以书面形式明确同意，且提前筹备安排。如果 TAMU 及/或 NCAR 未事先告知 QNLM 某材料属于出口管制范畴，未取得 QNLM 书面同意，未提供传送该材料的有关说明，TAMU 及/或 NCAR 不得向 QNLM 提供或对其公开受出口管制的材料（包括但不限于，设备、信息和/或数据）。

## **10. LIABILITY**

### **责任**

**10.1** Each Party agrees to be responsible for its own negligent acts and omissions under this MOA to the extent permitted under applicable laws.

各方同意在适用法律许可的范围内，对各自的过失及疏忽负责。

## **11. PUBLICATION**

### **出版**

**11.1** It is acknowledged that publication and the dissemination of research is a requirement of the Parties. All products resulting from PAs including model software, data, outputs and other deliverables (excluding project background IP and confidential information) will be made publically and freely available by the Parties as follows:

签约各方承认，出版及宣传是各方的共同需要。PA产生的所有产品，包括模型软件、数据、产出及其他交付成果（除项目背景知识产权及保密信息外）将按照以下规定免费公开：

**11.1.1** with regard to data and reports, on an open access basis;

以开放获取的方式，公开数据及报告；

**11.1.2** in the case of models, algorithms and software, on appropriate terms of use;

依照适当的使用条款，公开模型、算法及软件；

**11.1.3** on appropriate institutional repositories and websites; or

放置在适当的机构样品库及网站中；

**11.1.4** as otherwise agreed in writing between the Parties.

或依照签约方书面达成的一致意见行事。

**11.2** All publications and products resulting from this MOA must include the acknowledgment: *“Research completed through The International Laboratory for High Resolution Earth System Prediction, a collaboration by the Qingdao National Laboratory for Marine Science and Technology Development Center, Texas A&M University, and the National Center for Atmospheric Research”*.

本MOA下的出版物及产出须注明：“该研究通过国际高分辨率地球系统预测实验室完成。该机构由青岛海洋科学与技术国家实验室发展中心与德州农工大学及国家大气研究中心合作建立。”

**11.3** A Party may publish academic, professional and scholarly works pursuant to any PA provided that each Party is permitted thirty (30) days prior to submission for publication the

right to review such publication to remove any proprietary and/or confidential information or inaccurate references.

一方可以依照PA，出版学术作品、专业作品及学术著作，但须在投送发表前三十天，授权其他各方审查并删除出版物中的专有信息及/或保密信息或不当引用。

## **12. PUBLICITY**

### **宣传**

**12.1** It is acknowledged by the Parties that public awareness for iHESP is an important objective and that a communications plan will be agreed by the SC as soon as practicable following the Commencement Date of this MOA.

签约各方承认，公众知名度是 iHESP 的一项重要目标，SC 将在本 MOA 生效后，尽早确定一份宣传计划。

**12.2** To the extent permitted by relevant laws of P.R. China, Texas law and Colorado law, any public announcement, press release or other marketing material related to this MOA shall be issued jointly by QNLM, TAMU and NCAR and approved in advance through the appropriate channels within each Party. Nothing in this MOA shall be construed as conferring rights to use in advertising, publicity or otherwise the name of the Parties or any of their logos or trademarks without their prior written approval.

在中华人民共和国、德克萨斯州及科罗拉多州有关法律的许可范围内，任何公告、新闻发布或其他与本 MOA 相关的市场化材料应由 QNLM、TAMU 和 NCAR 共同发布，并事先通过恰当渠道在各机构内部获得批准。本 MOA 未授权任意一方，在未取得书面许可的情况下，使用签约方的名称、徽标或商标进行广告宣传。

## **13. DISPUTE RESOLUTION**

### **争议解决**

**13.1** Any dispute, controversy or claim arising out of or relating to this MOA, or a breach, termination or invalidity thereof, shall be settled amicably and in good faith through consultations among the three Parties. The Party claiming that a dispute, controversy or claim arising out of or relating to this MOA, or a breach, termination or invalidity thereof (dispute) exists must give the other Parties written notice of such dispute together with details of that dispute.

源于本MOA或与本MOA相关的任何争议、分歧或索赔，或本MOA的违约、终止或失效事宜，合作三方应秉承友好诚信原则协商解决。提出争议、分歧或索赔或提出MOA违约、终止或失效的一方，必须向其他签约方提供相关的书面通知及说明材料。

## **14. TERMINATION OF THIS MOA**

### **本 MOA 终止**

**14.1** This MOA may be terminated for convenience by any Party at any time prior to the expiration of the Term provided that the terminating Party gives written notice to the other Parties at least six (6) months in advance of the effective date of termination. The earlier termination or expiration of this MOA will not affect specific PAs entered into prior to the date of the MOA ending. Such PAs will continue for the period specified in the PA (unless the Parties otherwise agree) in writing.

协议到期之前，任何一方可以随时终止本 MOA，但须至少提前六个月向其他签约方发送书面通知。提前终止本 MOA，不影响已签署 PA 的效力。此类 PA 将按照约定期限继续生效（除非签约各方协商同意另做安排）。

**14.2** Termination of this MOA can also occur if the Parties are unable to resolve a dispute in accordance with this MOA; or for material breach of the MOA by one Party. Such termination requires written notification to all Parties at which time the breaching Party has three (3) months to rectify the identified acts or omissions constituting the breach. Failure to do so may terminate this MOA as determined by the non-breaching Parties.

如果签约各方无法依照本 MOA 解决争议，可以终止本 MOA；如果任意一方出现实质性违约，可以终止本 MOA。此类终止需要向签约各方发送书面通知，且须给予违约一方三个月的时间更正其过失或疏忽。如果过失或疏忽无法更正，可依照其他签约方意见，终止本 MOA。

**14.3** Where this MOA is terminated all rights or obligations in relation to future performance of the Parties are terminated; and this MOA will have no further effect except as to the settlement of accounts between the Parties in respect of liabilities, costs or expenses incurred under this MOA or in the course of the research program before the termination or arising after it in relation to the termination.

本 MOA 一旦终止，签约各方的相关权利义务随即终止；本 MOA 仅在债务、花费、开支的清偿方面有效，在其他方面失效。上述债务、花费、开支仅限于以下范围：发生于本 MOA 下，或解约前在项目实施过程中发生，或解约后因解约而发生。

**14.4** Fee that has not been allocated by the Parties to any continuing PA(s) that remain unaffected by the termination of the MOA shall be refunded. Where a PA has been terminated, the Parties may (in agreement) redistribute Fee allocated to that PA to another PA and, failing such agreement, must be refunded.

MOA 终止后的剩余经费，如未被签约方划拨给继续执行的 PA，则须退还经费。如果一项 PA 终止，签约方可以（在协商一致的前提下）将此 PA 经费分给另外的 PA，如果没有达成一致则须退还经费。

**14.5** The expiration or earlier termination of this MOA will not affect the continued operation of any provision, unless the contrary intention appears, relating to ownership and use of IP, confidential information, publications, publicity, or disputes.



如无相反旨意，本MOA到期或提前终止，不影响以下方面的条款继续生效：知识产权所有权及使用、保密信息、出版、宣传、争议。

## **15. GOVERNING LAW**

### **适用法律**

**15.1** All activities conducted under this MOA shall observe any and all applicable laws and regulations of the country and/or the state hosting such activities. All such activities shall not go against the national interests of P.R. China and the U.S. and the interests of the Parties.

本 MOA 下实施的所有活动应遵循活动所在国家/地区的适用法规。任何活动不得损害中华人民共和国及美国的国家利益，不得损害签约各方的利益。

## **16. MISCELLANEOUS**

### **补充条款**

**16.1** This MOA, contains the entire understanding of the Parties regarding the matters herein, and supersedes all other written and oral agreements between the Parties regarding such matters. This MOA may be modified or amended only by a written agreement signed by the Parties' authorized representatives, including without limitation pursuant to any PA.

本 MOA 包含签约各方有关此项合作的全面共识，效力高于签约各方有关事宜的所有其他书面或口头协议。如果签约各方授权代表签署书面协议，可以对本 MOA 进行修订或补充，包括但不限于根据 PA 进行修订或补充。

**16.2** This MOA does not in any way limit the research and/or development by a Party, nor does it preclude a Party from working with a third-party on research and/or development, unless specific limitations are set out in a PA and, in such case, the limitations shall apply only to the specific project set out in the PA.

本 MOA 不以任何方式限制任意一方的研究和/或发展，不阻止任意一方与外部机构就研究与/或发展进行合作，除非 PA 中明确规定上述限制。此类限制仅适用于 PA 中规定的具体项目。

**16.3** No Party is required to perform any term, condition, or covenant of this MOA, if performance is prevented or delayed by a natural occurrence, a fire, an act of God, an act of terrorism, or other occurrence, the cause of which is not reasonably within the control of the Party and which by due diligence it is unable to prevent or overcome.

如果发生自然事件、火灾、不可抗力、恐怖行动或其他不可控事件，有关签约方尽职行事仍不能阻止或解决，导致未能执行或未能按时执行本 MOA 的任何条款或契约，该方无须继续执行。

**16.4** This MOA may not be assigned, in whole or in part, by any Party without the prior written consent of the other Parties.. Any attempt to do so will be void.

未取得其他签约方书面同意，任意一方不得将 MOA 进行全部或部分转让。此类转让无效。

**16.5** The failure of any Party at any time to require performance by the other Parties of any provision of this MOA will in no way affect the right to require performance at any later time nor will the waiver by a Party of a breach of any provision waive any succeeding breach of that provision or waive the provision itself.

任意一方某次弃权要求另一方履行本 MOA 某项条款，不影响今后要求其履行该条款。对某条款的某次违反行为弃权追究，不代表弃权追求该条款的后续违反行为或放弃该条款。

**16.6** If any provision of this MOA is held to be invalid, illegal or unenforceable, then that provision will be severed and will not affect the remainder of this MOA.

如果本 MOA 中某项条款被认为无效、非法或无法实行，那么将废除该条款且不影响本 MOA 其余部分。

**16.7** This MOA may be executed in any number of counterparts, including facsimile or scanned PDF documents. Each such counterpart, or scanned PDF document shall be deemed an original instrument and all of which, together, shall constitute one and the same executed MOA.

本 MOA 可以制作若干副本，包括传真或扫描 PDF 文件。每一份副本或扫描 PDF 文件将被视为原文本，且所有副本构成一份完全一致的 MOA。

**16.8** Unless otherwise provided in a specific PA, expenses incurred by each Party under this MOA will be the sole responsibility of that Party and all activities will be dependent upon the budgetary appropriations of the Parties.

除非在具体 PA 中另做规定，签约各方在本 MOA 下产生的花费将由该方承担。所有活动将依靠签约各方的预算拨款进行。

**16.9** Each Party agrees to comply with the host country's immigration guidelines in support of exchanges of faculty and/or researchers.

各方同意遵守接待国的移民方针，以支持职员及/或研究人员的交流。

**16.10** All activities conducted under this MOA will be in accordance with all applicable rules and regulations of the Parties, and all applicable laws of P.R. China, U.S. federal, state and local laws, rules and regulations.

本MOA下实施的所有工作须遵循签约各方适用规章制度，中华人民共和国适用法律，美国联邦、州及地方适用法律。

## 17. Notices and Contacts

### 通知与联系

17.1 Notices provided under this MOA must be in writing and delivered to the Administrative contacts identified below by (i) certified mail, return receipt requested; (ii) hand delivery; (iii) email; or (iv) delivery by a reputable overnight courier service (in the case of delivery by email the notice must be followed immediately by a copy of the notice being delivered by a means provided in (i), (ii), or (iv)). The notice will be deemed given on the day the notice is received. In the case of notice by email, the notice is deemed received at the local time of the receiving machine, and if not received, then the date the follow-up copy is received. The points of contact for coordinating activities under this MOA are:

本MOA下的通知必须以书面形式发送给下列行政联系人，发送方式如下：(i) 挂号信，需要收件回执；(ii) 直接递交；(iii) 电子邮件；或(iv) 由次日快递公司递送（如果用电子邮件发送通知，则必须随即通过(i)、(ii)或(iv)所述方式寄送纸质通知）。如果通过电子邮件发送通知，则通知送达时间以接受邮件计算机的当地时间为准。如果未收到电子邮件，则以收到纸质文本的时间为准。本MOA下负责协调工作的联系人信息如下：

## PROGRAMMATIC

### 项目

<b>The Qingdao National Laboratory for Marine Science and Technology</b> 青岛海洋科学与技术国家实验室	
Name: 姓名:	Professor Tan Gongke 谭攻克
Title: 职位	Director of Department of International Affairs, QNLM 海洋国家实验室国际事务部部长
Address: 地址:	1 Wenhai Rd., Aoshanwei Twon, Jimo District, Qingdao 266237, China 中国青岛即墨区鳌山卫镇问海路1号, 266237

Phone Number: 联系电话:	+86-532-58719719 +86-532-58719719
E-mail Address: 电子邮件:	gktan@qnlm.ac gktan@qnlm.ac
<b>Texas A&amp;M University</b> 德州农工大学	
Name: 姓名:	Ping Chang 张平
Title: 职位:	Professor Oceanography 海洋学教授
Address: 地址	Texas A&M University 德州农工大学
Phone Number: 联系电话:	+1-979-845 8196 +1-979-845 8196
E-mail Address: 电子邮箱:	ping@tamu.edu ping@tamu.edu
<b>National Center for Atmospheric Research</b> 国家大气研究中心	
Name: 姓名:	Gokhan Danabasoglu Gokhan Danabasoglu
Title: 职位:	Senior Scientist 资深科学家
Address: 地址:	PO Box 3000, Boulder, CO 80307 科罗拉多州80307, 博尔德, 邮政信箱3000

Phone Number: 联系电话:	+1 303 497 1604 +1 303 497 1604
E-mail Address: 电子邮箱:	gokhan@ucar.edu gokhan@ucar.edu

#### ADMINISTRATIVE

#### 行政

<b>The Qingdao National Laboratory for Marine Science and Technology</b> 青岛海洋科学与技术国家实验室	
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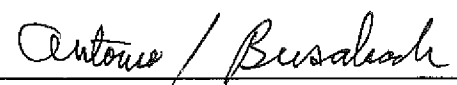
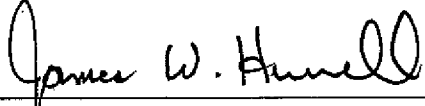
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**18. APPROVALS**

**批准**

This MOA is entered into and made effective as of the date later in time indicated below.

本MOA签署并于下表所示日期生效。

<p><b>Accepted and approved for:</b> 接受并同意:</p> <p><b>QINGDAO NATIONAL LABORATORY FOR MARINE SCIENCE AND TECHNOLOGY</b> 青岛海洋科学与技术国家实验室</p>	<p><b>Accepted and approved for:</b> 接受并同意:</p> <p><b>TEXAS A&amp;M UNIVERSITY</b> 德州农工大学</p>
<p>By: Wu Lixin QNLN Director QNLN Development Center Director</p> <p>签署人: 海洋国家实验室主任 吴立新</p>	<p>By: Michael Benedik TAMU Vice Provost</p> <p>签署人: 德州农工大学副校长 Michael Benedik</p>
	
<p>Date: 日期: 11/16/2017</p>	<p>Date: 日期: 11/16/17</p>
<p><b>Accepted and approved for:</b> 接受并同意:</p> <p><b>UNIVERSITY CORPORATION FOR ATMOSPHERIC RESEARCH</b> 美国大气研究大学联盟</p>	<p><b>Accepted and approved for:</b> 接受并同意:</p> <p><b>National CENTER FOR ATMOSPHERIC RESEARCH</b> 美国国家大气研究中心</p>
<p>By: Antonio J. Busalacchi, UCAR President</p> <p>签署人: UCAR主席 Antonio J. Busalacchi</p>	<p>By: James W. Hurrell NCAR Director</p> <p>签署人: NCAR主席 James W. Hurrell</p>
	
<p>Date: 日期: 11/16/17</p>	<p>Date: 日期: 11/16/17</p>