INITIATIVE DOCUMENT

Proposal for the Initiation and Establishment of the International Alliance for Solar Radiation Modification (IASRM)

Solar Radiation Modification | International Cooperation | July 2026

To experts and scholars, academic organizations, universities, research institutes, and engineering and technical institutions worldwide in the field of global climate change response:

Amid escalating global warming and the frequent occurrence of more extreme climate events, tackling climate change through mitigation (greenhouse gas emission control and reduction) has devolved from a universal global consensus to fragmentation.In recent years, global climate governance centered on climate change mitigation has faced growing uncertainties, and exclusive reliance on emission reduction measures may prove insufficient to deliver the climate targets stipulated in the Paris Agreement. Furthermore, global investments in climate adaptation and resilience remain woefully insufficient to address most climate hazards. As an important complementary mechanism for climate mitigation and adaptation, Solar Radiation Modification (SRM) has garnered widespread attention and in-depth research from global scientific, engineering, and governance communities, alongside persistent academic and public controversies.

Solar Radiation Modification (SRM) is a comprehensive multi-technology climate intervention approach. It artificially regulates the albedo of the atmosphere, cloud layers, and land surface to alter the radiative balance of the Earth system, thereby curbing the trend of global warming. Its major technical pathways cover Stratospheric Aerosol Injection (SAI), Marine Cloud Brightening (MCB), cirrus cloud modification, Surface Albedo Modification (SAM), and space-based reflection. Each pathway has unique technical attributes, application scenarios and implementation conditions, jointly forming a systematic and complete SRM technical framework. Research in this field involves in-depth interdisciplinary integration of climate science, satellite remote sensing, Earth system simulation, atmospheric engineering, ecology and environmental science, new energy technologies, building design, economic evaluation, international ethics, and global governance.

At present, global research into Solar Radiation Modification (SRM) is advancing at a rapid pace, though the field is faced with lingering controversies and deficiencies. Technologies centred on atmospheric radiative intervention, such as Stratospheric Aerosol Injection (SAI), carry considerable uncertainties. By comparison, Surface Albedo Modification (SAM) which is built upon surface albedo regulation has been widely deployed. It features unique strengths including high public acceptance and manageable risks, yet its climatic effects are relatively confined to local areas.

Up to now, no overarching international cooperative body has been established to cover all technical pathways of SRM and coordinate efforts from all parties. Research on individual technical branches remains fragmented, leaving substantial gaps in international collaboration across multiple key areas: unified monitoring standards, quantitative accounting methodologies, technical specification frameworks, global data sharing, cross-domain engineering coordination, and transnational ethical governance.

To fill these international gaps and bolster global climate governance as well as the delivery of Sustainable Development Goals, we hereby solemnly propose the establishment of the International Alliance for Solar Radiation Modification (IASRM). We sincerely invite experts, scholars and institutions worldwide dedicated to SRM research, technological R&D, engineering application and regulatory governance to work together for joint consultation, collaborative development, concerted technological breakthroughs and win-win cooperation.

I. Mission of the Alliance

Guided by the principles of scientific rigor, neutrality and objectivity, data-driven research, ecological security, and global equity, we aim to establish an open, non-profit international scientific and technological cooperation platform for interdisciplinary collaboration. This platform will advance the coordinated development of fundamental research, technological innovation, standard formulation, engineering demonstration, and governance regulation in the Solar Radiation Modification (SRM) field, and provide solid scientific support and practical engineering solutions for global climate change mitigation and adaptation.

II. Positioning of the Alliance

- The world’s comprehensive international academic and engineering organization focused exclusively on SRM;
- An academic support platform connecting international bodies including the World Meteorological Organization (WMO), United Nations Environment Programme (UNEP), International Organization for Standardization (ISO), and World Climate Research Programme (WCRP);
- A cross-border collaborative hub linking scientific research, satellite monitoring, engineering application, standard formulation and international governance;
- An open, inclusive, multi-national and academically neutral global community.

III. Core Tasks of the Alliance

Academic Research Coordination

Integrate global albedo monitoring data, Earth system models and experimental results; establish unified quantification methods for SRM climate effects, radiative forcing, economic assessment, governance mechanisms, Absolute Global Warming Potential (AGWP), etc.; promote joint research and data sharing.

Standard System Development

Collaborate with relevant ISO technical committees and national standardization bodies to develop a series of international technical specifications and draft standards covering surface albedo monitoring, data products, accounting methods, engineering design, risk assessment and other fields.

Technology and Engineering Promotion

Promote integrated demonstrations of Surface Albedo Modification (SAM) in scenarios including urban construction, ecological restoration, agricultural production, and energy and power sectors, and develop safe, feasible engineering technical solutions and practical implementation pathways.

Risk and Ethical Assessment

Conduct research on the ecological, environmental, regional climatic and socio-economic impacts of SRM; establish a full-chain risk assessment and ethical governance framework, and form globally recognized guidelines for research and experimentation.

International Exchange and Cooperation

Host international academic conferences, workshops and training programs; build a platform for young scholars; promote global exchange of technologies, talents and resources.

Policy and Governance Recommendations

Provide scientific consensus, technical assessments and governance recommendations in the SRM field for governments and international climate governance mechanisms; promote a responsible and sustainable international cooperation framework.

IV. Initiation and Preparation

The IASRM is proposed to be jointly initiated by leading research institutions and enterprises in the fields of climate, remote sensing, energy, building, ecology and standards. The Secretariat is planned to be based in China. Relying on the existing international SRM conference platform. All preparatory work is scheduled for completion in 2026, with the official launch in 2027.

We sincerely invite:

Relevant universities, research institutes, academic organizations, new energy and ecological engineering enterprises, international institutions and senior experts and scholars from all countries to respond positively to this initiative, participate in the preparation of the IASRM, jointly discuss the charter and structure, establish working groups, advance academic cooperation, and jointly build SRM into a safe, efficient and inclusive new pathway for global climate mitigation.

For Climate, For Our Future. The Time for Action Is Now.

Initiating Organizations (Founding Members):

Date: July 2026