

# はじめに | FOREWORD



大気海洋研究所では、海洋と大気およびそこに育まれる生物の複雑なメカニズム、そして地球の誕生から現在に至るこれらの進化と変動のドラマを解き明かし、人類と地球環境の未来を考えるための科学的基盤を与えることを目的として研究を進めています。また、共同利用・共同研究拠点として、研究船白鳳丸・新青丸をはじめ柏キャンパス・岩手県大槌キャンパスの陸上研究施設、気候の数値モデル等を国内外の研究者の皆様に提供し、共同研究を進めると共に、次世代の大気海洋科学を担う若手研究者や海洋・大気・地球生命圏に関する豊かな科学的知識を備えた人材の育成にも力を注いでいます。

地球の表面積の7割を占め、最深部は1万メートルをも越える海洋には、未知の科学的課題が数多く残されており、多くの生物・エネルギー・鉱物などの資源も秘められています。四方を海洋に囲まれ、領海と排他的経済水域を併せると世界第6位の面積を持つ我が国にとって、また人類や多様な生物の将来にとって、海洋の研究は重要です。また、地球温暖化を含む地球環境変動のメカニズムの解明とその信頼できる予測は、人類の未来を考え、様々な国際交渉や将来の災害に備える施策立案の上で重要です。当所では、物理学・化学・地学・生物学・生物資源学などの多様な分野の研究者が連携して、科学的・社会的に重要な海洋と気候の研究を推進しています。平成25年9月に公表されたIPCC（気候変動に関する政府間パネル）の第5次評価報告書第1作業部会報告書には、当研究所の複数の所員が大きく貢献しました。平成26年4月からは、これまでの3研究系・3研究センターの研究体制に加え、先端的分析装置群の統合的運用により、大気海洋における物質循環動態、古環境復元、海洋生物の行動履歴の解明等に関する先導的な研究を推進する高解像度環境解析センターを新設し、一層の研究の発展を図っています。

東日本大震災で壊滅的被害を受けた岩手県大槌町の附属国際沿岸海洋研究センターの復旧には、大学本部と文部科学省のご支援を得て鋭意取り組んでいます。震災後まもなく整備した3隻の小型調査船「グランメーユ」「赤浜」「チャレンジャー」に加えて、平成25年11月には、津波で流失した研究調査船「弥生」の後継船も整備し、共同利用研究を充実すると共に、津波による生態系の破壊の実態とその再生過程の把握など震災の影響に関する研究を推進しています。

当所では、今後も世界の先頭に立って大気海洋科学研究を推進すると共に、共同利用・共同研究の一層の充実に取り組んでいく覚悟です。皆様のご支援・ご協力をお願い申し上げます。

The aim of the Atmosphere and Ocean Research Institute (AORI) is to clarify the complex mechanisms of the oceans, the atmosphere, and the living organisms nurtured in these spheres, along with their evolution and variations since their birth to date, and to provide a scientific foundation for considering the future of humans and the global environment. In addition, as the Joint Usage/Research Center for Atmosphere and Ocean Sciences, we collaborate with researchers at home and abroad by conducting joint usage/research projects using the research vessels Hakuho Maru and Shinsei Maru, the onshore research facilities at the Kashiwa campus and at the Otsuchi campus in Iwate Prefecture, and numerical climate models and so on. We also contribute to cultivating researchers responsible for the next generation of atmospheric and oceanic sciences, and human resources with rich scientific knowledge of the oceans, the atmosphere, and the biosphere.

The oceans, which occupy 70 percent of the earth's surface and reach more than ten thousand meters below the surface in the deepest areas, contain a number of unknown phenomena, unresolved subjects, and a wealth of resources including living organisms and sources of energy and minerals. Research of the oceans is essential to the future of humans and a variety of living organisms; it is especially significant for our country, which is surrounded by oceans, and has the 6th largest marine area in the world, combining the territorial waters and exclusive economic zones. Furthermore, clarification of the mechanisms of global environmental changes, such as global warming, and their reliable projection are crucial for considering the future of humans and devising measures to prepare for various international negotiations and future disasters. At AORI, researchers from various disciplines, such as physics, chemistry, ocean floor science, biology, and fishery science, collaborate to perform comprehensive studies of the oceans and the climate that are scientifically and socially important. Several researchers of AORI also have contributed greatly to the Working Group I report in the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), which was published in September 2013. In addition to the existing three research divisions and three research centers, we established the Analytical Center for Environmental Study in April 2014, which, through integrative operation of state-of-the-art analyzers, promotes leading research on material circulation in the atmosphere and oceans, paleo-environmental reconstruction, and the life history of marine organisms.

With support from the university headquarters and the Ministry of Education, Culture, Sports, Science and Technology, we are making every effort to restore the International Coastal Research Center (ICRC) located in the town of Otsuchi, Iwate Prefecture, which suffered catastrophic damage from the tsunami caused by the Great East Japan Earthquake. In addition to the three research vessels, Grand Mailet, Akahama, and Challenger, which were deployed soon after the disaster, a successor to the research vessel Yayoi, which was swept away by the tsunami, was launched in November 2013. We are enhancing joint usage/research and promoting research on the effects of the earthquake such as tsunami damage to ecosystems, and their restoration processes.

AORI will continue to lead the world in cutting-edge research in atmosphere and ocean sciences, and work on further enrichment of joint usage/research activities. We solicit your continued cooperation and support in these endeavors.

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