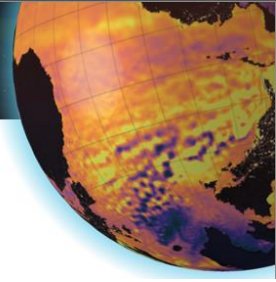


A BRICS Predicted Ocean: Roadmap and Demonstration of model validations, intercomparisons and applications for sustainable management of the coastal oceans – PARADIGM

In 2021, PARADIGM was submitted to the 5th BRICS Science, Technology, and Innovation (STI) Framework Programme Call, competing with more than 383 pre-proposals, from which 322 projects were invited to submit full proposals. With an overall approval rate of 9%, only 33 projects were approved and PARADIGM represents one of the two approved projects in the thematic area of Ocean and Polar Science and Technology (OPST). PARADIGM unites scientists from all initial BRICS representative countries (Brazil, Russia, India, China and South Africa) with the purpose of providing high quality ocean forecasting products and strengthening three already endorsed programs of the United Nations Decade of Ocean Science for Sustainable Development (UN Ocean Decade). They are: i) CoastPredict - Observing and Predicting the Global Coastal Ocean; ii) ForeSea – an OceanPredict contribution to the UN Ocean Decade and iii) OSF - Ocean to climate Seamless Forecasting System. Scientists involved in PARADIGM participate in these programs and integrate the BRICS Working Group on OPST. The UN Ocean Decade sets out to strengthen the management of our oceans and coasts for the benefit of humanity by supporting science that addresses societal needs and protects the ocean and its resources, while enabling the capacity development required to reach these goals. The need for operational information of the coastal ocean is of paramount importance in meeting the needs of society and has been explicitly addressed by these 3 UN-endorsed programs. PARADIGM aims to: i) Use the observations collected within the BRICS countries to validate and intercompare Ocean Forecasting and Analysis Systems (OFAS) at each region; ii) Implement high-resolution OFAS in specific sites and iii) Provide capacity building by organizing training/workshops focusing on Operational Oceanography in BRICS countries. Within the framework of the UN Ocean Decade, PARADIGM was suggested with the vision of 'A Predicted Ocean' and 'A Safe Ocean'. The project takes this concept forward and relies on collaboration and cooperation of the BRICS partners through a jointly designed paradigm of methodological approaches that are mutually beneficial, regionally applicable, and globally relevant. BRICS nations more advanced in their forecasting and modelling capabilities will be instrumental in developing the training courses. China will also provide surface wave-tide-circulation fully coupled model to compare with all other available OFAS. All



nations will contribute to the model intercomparison and validation framework, by developing metrics and methodologies and using datasets that are available in their respective regions.

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