S2S Real Time Pilot Workshop

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Presentation Title: WWRP/WCRP Future Perspectives on S2S

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Session Title: S2S RTP achievements and next steps

Abstract:

“Science for Society” will be more focused and pursued. Currently, WWRP has been discussing to develop a new implementation plan for the period 2024 - 2027. While they will continue to pursue scientific advances, special attention for social benefits from those new scientific knowledge will be paid. Reducing possible disaster risks through good communications between scientists and users including decision-makers are strongly required. To achieve these, WWRP proposes to conduct several key projects starting in the timeframe between 2024 and 2027 as a five-year project in addition to the on-going projects (High-Impact Weather core project and several RDPs). New projects proposed include research topics related to polar and urban regions, hydrological and meteorological aspects, and S2S prediction. While all projects take care of the ways of effective communication with users, one proposed project facilitates communication and education and it also covers those points for all proposed projects. In the past decades we have seen great advances in weather and climate research from viewpoints of observations and numerical modelings with evolving technologies under the guidance of WMO and its related activities. Recent knowledge, however, has also taught us that accurate forecast skill does not necessarily reflect the values of users. The key is to transfer such scientific knowledge to useful ones which fit their needs properly.

As for the next stage of S2S prediction research, applications for agriculture, water resources management, public health, and renewable energy will be intensively pursued. In addition to several scientific challenges such as exploiting predictability limits and predicting extreme events, a big challenge is to obtain ways of synthesizing knowledge and sharing of “probabilistic” prediction, which is a central component of this time scale, with users. Co-design and co-development will be mandatory and it is also anticipated that social scientists take some roles.

On the one hand, WCRP has recently established a new core project ESMO (Earth System Modelling and Observations), which is expected to take a seamless and value-cycle model-data-observation approach across earth system components. ESMO acts closely with all other core projects such as CLIVAR and GEWEX. In addition, WCRP has also initiated a new approach called “lighthouse activities”, which is designed to manage climate risks and meet society’s urgent needs. Those ideas are actionable based on collaboration with many relevant programs and partners. While each program and activity have their own specific research area and approach, S2S prediction research cannot be accomplished without cooperation among those bodies.

In particular, we believe the RTP project acts as a testbed for various future S2S applications. Thus, its knowledge and any experience have contributed to pave the road for the coming effort.