



Sub-seasonal to Seasonal Prediction Project (S2S)

41st Session of the WCRP Joint Scientific Committee

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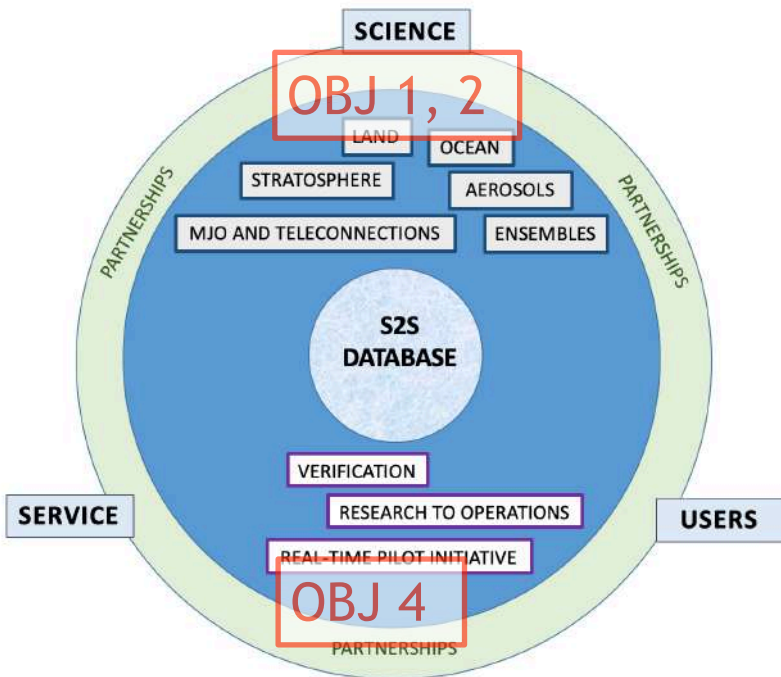
May 2020



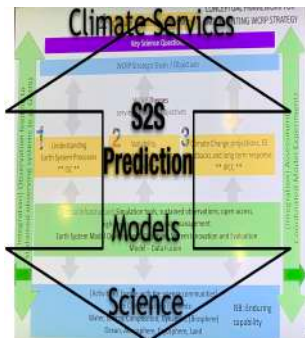
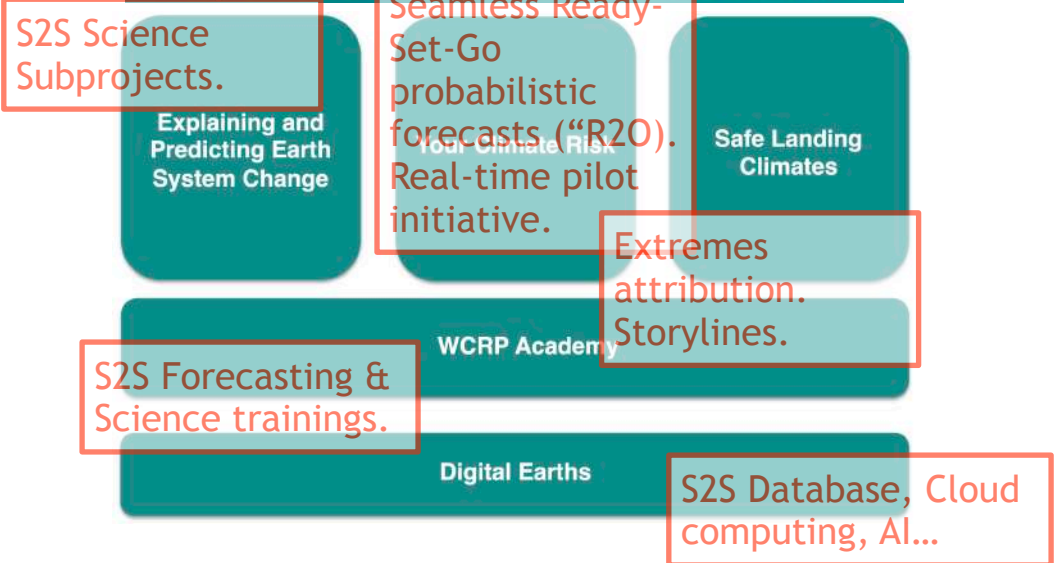
International
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Links to the WCRP Strategic and Implementation Plans

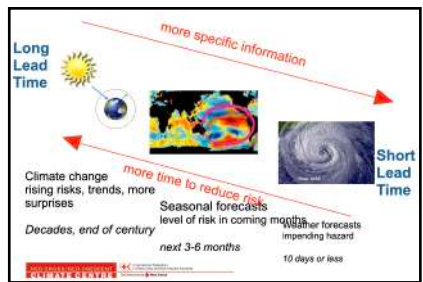


Proposed Lighthouse Activities



Through prediction, S2S activities connect basic science to users and services.

S2S embodies the seamless prediction paradigm, across timescales, and from science to use.



Emerging Opportunities & Issues

- S2S connects WCRP core science (Obj 1) with risk management (Obj 4) through forecasts and early warning system development **activities**.
 - 6 Science subprojects
 - 16 Climate-service demonstration projects spanning GFCS priority areas.
 - R2O: Still big issue with low S2S precip skill over land.
- S2S strongly linked **operationally** & **regionally**
 - WMO GPCS, NMHSs, RCCs, RCOFs (R2O)
 - CORA: opportunity to connect Objs 2+3 through Obj 4
 - Downscaling question: potential to link w/ CORDEX
- **Data infrastructure integration**
 - Ocean/Sea-Ice fields are now being added to the S2S database
 - Existing integration thru IRI Data Library to S2S, SubX, NMME, EU-C3S for server-side computing
 - Weather & Climate data needs Big Data community platform in cloud for access/analysis (incl. AI)
- Education & capacity building through WMO trainings & regional institutions like APCC & RIMES: **WCRP/WMO Academies?**

s2sprediction.net

The screenshot displays the s2sprediction.net website interface. At the top, there is a navigation bar with the S2S Prediction Project logo and various menu items like 'About S2S', 'Science Sub-projects', 'Database/Products', 'Real-time Pilot', 'Github', 'News', and 'Documents'. Below the navigation bar, there are several content sections:

- S2S News:** A news article titled 'The S2S Real Time Pilot Initiative started on Nov. 1 2019.' with a sub-headline 'S2S Real Time Pilot Initiative has been kicked off on Nov 1 with 16 projects accessing S2S forecast data in real time for a two year period. 16 projects are participating in the S2S RTP. 16 projects are listed at http://s2sprediction.net/file/documents_reports/16Projects.pdf'. It is dated 'Updated: 2020-02-03 19:17'. Below this is another news item: 'Nine new ocean/sea-ice parameters are added in ECMWF S2S DB. See <https://confluence.ecmwf.int/display/S2S/Parameters#Parameters-Oceanparameters> for the description of each parameter. The new parameters are currently available from the ECMWF real-time forecasts from 1st January 2020 and the corresponding re-forecasts in the ECMWF data portal: <https://apps.ecmwf.int/datasets/data/s2s/levtype=sfc/type=cf/>'.
- S2S Database & Products:** A section with buttons for 'ECMWF', 'CMA', 'IRI/LDEO Data Lib.', 'ECMWF Products (graphics)', 'S2S Museum', and 'Github Codes'.
- Science Sub-projects Wikis:** A list of wikis including 'MJO and Teleconnections (Dr. Cristiana Stan)', 'Aerosols (Dr. Frederic Vitart)', 'Land (Dr. Paul Dirmeyer)', 'Ocean (Dr. Harry Hendon)', 'Stratosphere (Dr. Andrew Charlton Perez)', 'Ensembles (Dr. Yuhei Takaya)', and 'Machine Learning'.
- Real-time Pilot Wiki:** A section titled 'List of Projects participating in the S2S Real Time Pilot Initiative'.
- Statistics:** A section with buttons for 'ECMWF', 'CMA', and 'IRI', each with a link to 'Usage statistics (Data volumes, # of requests, active users, and users/country)'. The 'ECMWF' button is highlighted.
- Publications using the S2S DB:** A bar chart showing the number of publications from 2015 to 2020. The data is: 2015: 1, 2016: 3, 2017: 20, 2018: 41, 2019: 45, 2020: 24. The total number of publications is 134.
- Mailing List:** A section with a text box stating 'There is a mailing list of the S2S Prediction Project, to get the latest information about the S2S activities, Newsletter, update of the S2S database. To join to the mailing list, all you need is just to click the right blue button.' and a 'Join to the S2S Mailing List' button.

Additional Slides



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S2S Linkages

GEWEX-GASS WGSIP

**Land-atmosphere
coupling & initialization**
MIPS: LS4P, LFMIP-OBS,
GLACE-ESM
SnowGLACE.

CLIVAR, CliC Ocean

coordinated case studies of
ocean extreme events & air-sea
interaction. Sea ice prediction
assessment. Impact of the
ocean obs system.

WGNE, GAW Aerosols

S2S/WGNE coord expt
with/without interactive
aerosols.
4-6 modeling centers

WGSIP, WWRP MJO

Teleconnections
Systematic errors
Relationships

WGNE, PDEF DAOS

Ensembles
Stochastic physics
sensitivity expt.

SPARC

Stratosphere

Nudging expts to better
understand impact of
SSWs. Also impact of
QBO on the MJO.

WMO, JWGFV

Research 2 Operations
Criteria for GPCs & S2S Lead Centre
Verification scores, MME methods,
calibration, product development
research

WWRP-SERA

**Real-time
Pilot Initiative**



WORLD
METEOROLOGICAL
ORGANIZATION



United Nations
Educational, Scientific and
Cultural Organization



Intergovernmental
Oceanographic
Commission




International
Science Council



World Climate Research Programme

FORECASTS OF TYPHOON KAMMURI (TISOY)




Zoom Earth
2019 Dec 7 PM
Kammuri (Tisoy) 2019

Date	Time	Wind	Pressure
Dec 7	18:00	15	1002
Dec 7	15:00	15	1002
Dec 7	12:00	15	1002
Dec 7	09:00	15	1002
Dec 7	06:00	15	1002
Dec 7	03:00	15	1002
Dec 7	00:00	15	1002
Dec 6	21:00	15	1002
Dec 6	18:00	15	1002
Dec 6	15:00	15	1002
Dec 6	12:00	15	1002
Dec 6	09:00	15	1002
Dec 6	06:00	15	1002
Dec 6	03:00	15	1002
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US News Press Freedom Silicon Valley & Technology VOA StudentU

How the Normally Hard-Hit Philippines Just Averted Major Typhoon Damage

By Ralph Jennings
December 04, 2019 05:53 AM



Residents stand among their damaged houses after Typhoon Kammuri hit Legazpi City, Albay, Philippines, December 3, 2019. REUTERS/Alvin Luyao/NO-NEA/LEO-NG-ARCHIVES

TAIPEI, TAIWAN - A typhoon that swept over the Philippines Tuesday killed at least 10 people in a path of destruction that reached the capital Manila. But the country averted a larger-scale disaster, the likes of which often bedevil the impoverished country, due to stronger preparations

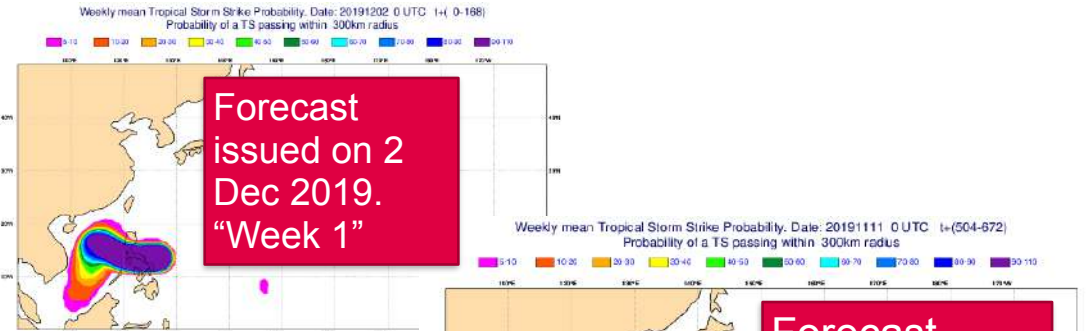
CHILD MARRIAGE
The Worth of Girl

East Asia Pacific
A Journalist Looks Back as Myanmar's Government Faces Genocide Charges

East Asia Pacific
AP Interview: Taiwan May Help if Hong Kong Violence Expands

East Asia Pacific
Haze From Rippling Bushfires Envelopes Surabaya

ECMWF TC strike probability forecasts - 2-8 Dec 2019



Enhanced strike probability predicted over 3 weeks in advance

Major damage averted through better prep - Longer lead forecasts are critical to robust risk management.