# A sea-ice model on the cube-sphere for estimating the global ocean and sea-ice circulations
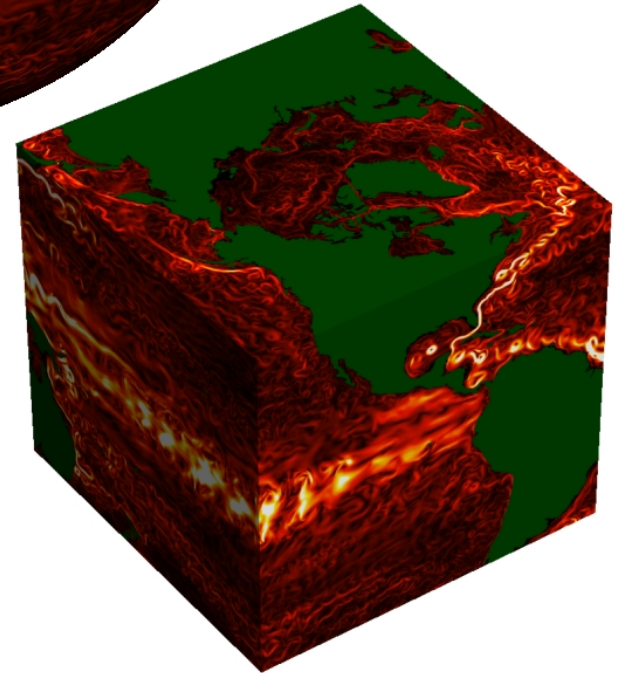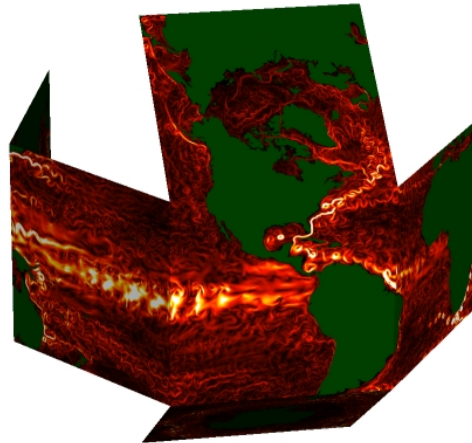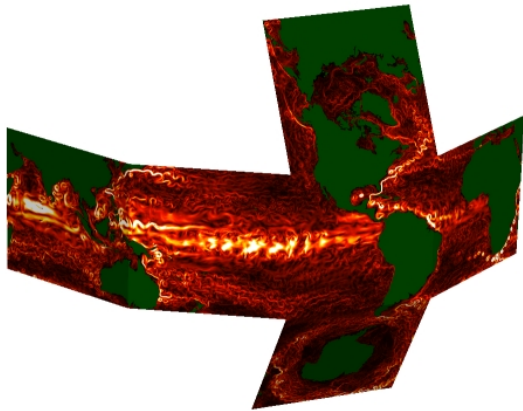
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Objective: develop a sea-ice model for the ECCO (Estimating the Circulation and Climate of the Ocean) project in order to allow eddy-permitting estimates of the global-ocean and sea-ice circulations (**http://ecco.jpl.nasa.gov/cube_sphere/**).
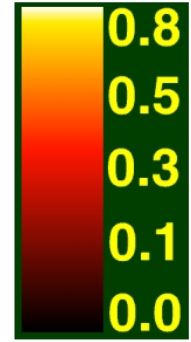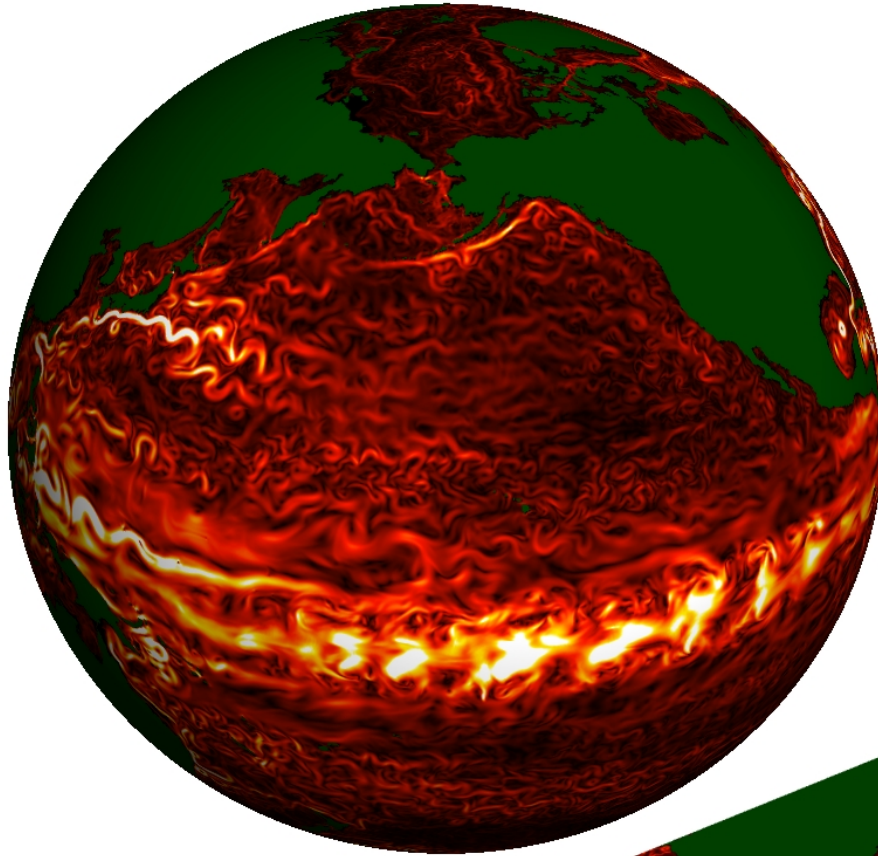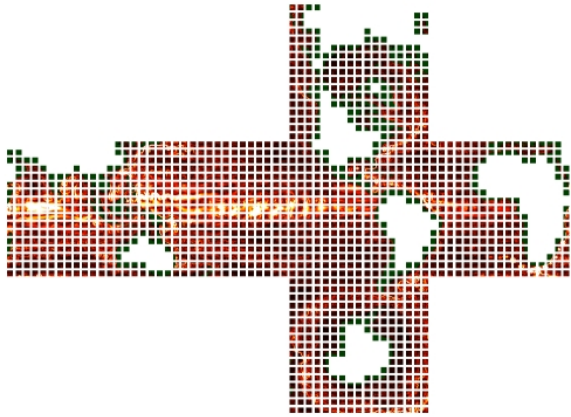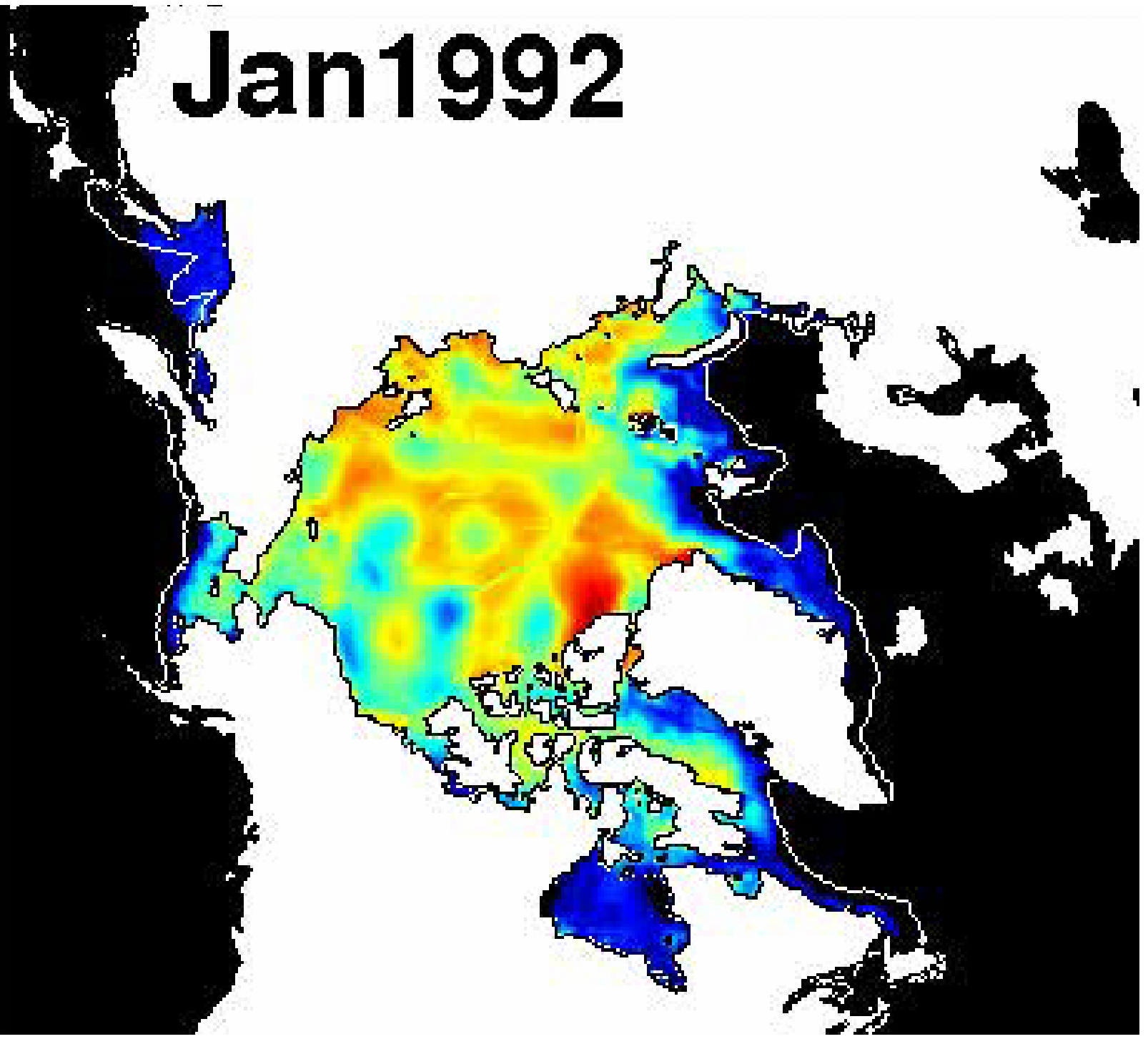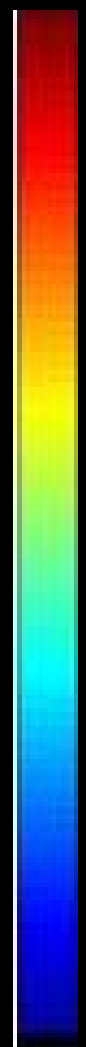
Speed at 15m

Effective Sea-Ice Thickness

> 2 m

1 m

0 m

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Summary

A dynamic-thermodynamic sea-ice model has been added to an efficient cube-sphere configuration of the MIT GCM.

This configuration is being used by ECCO to obtain dynamically-consistent estimates of the global ocean and sea-ice circulations.

Preliminary, eddy-permitting estimates are being obtained using model Green's functions and an approximate Kalman filter and smoother.

Work is also underway towards an adjoint-model reanalysis as part of U.S. GODAE, the Global Ocean Data Assimilation Experiment.