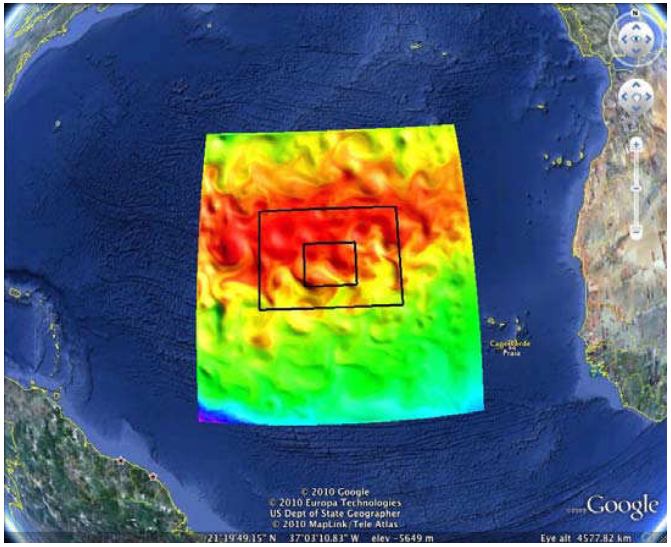
Simulation of Eddy Kinetic Energies in the SPURS Region



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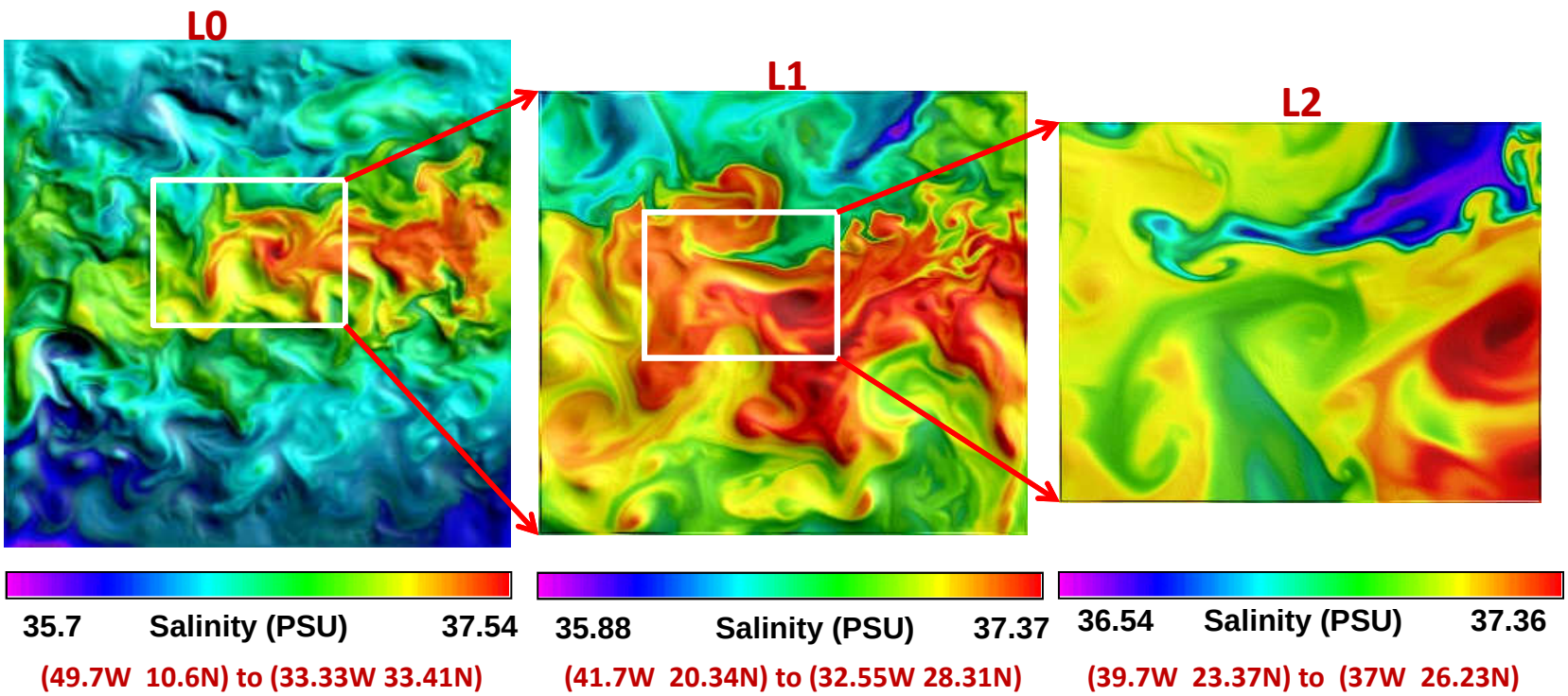
June, 2012

Three-Domain ROMS Model in Support of SPURS

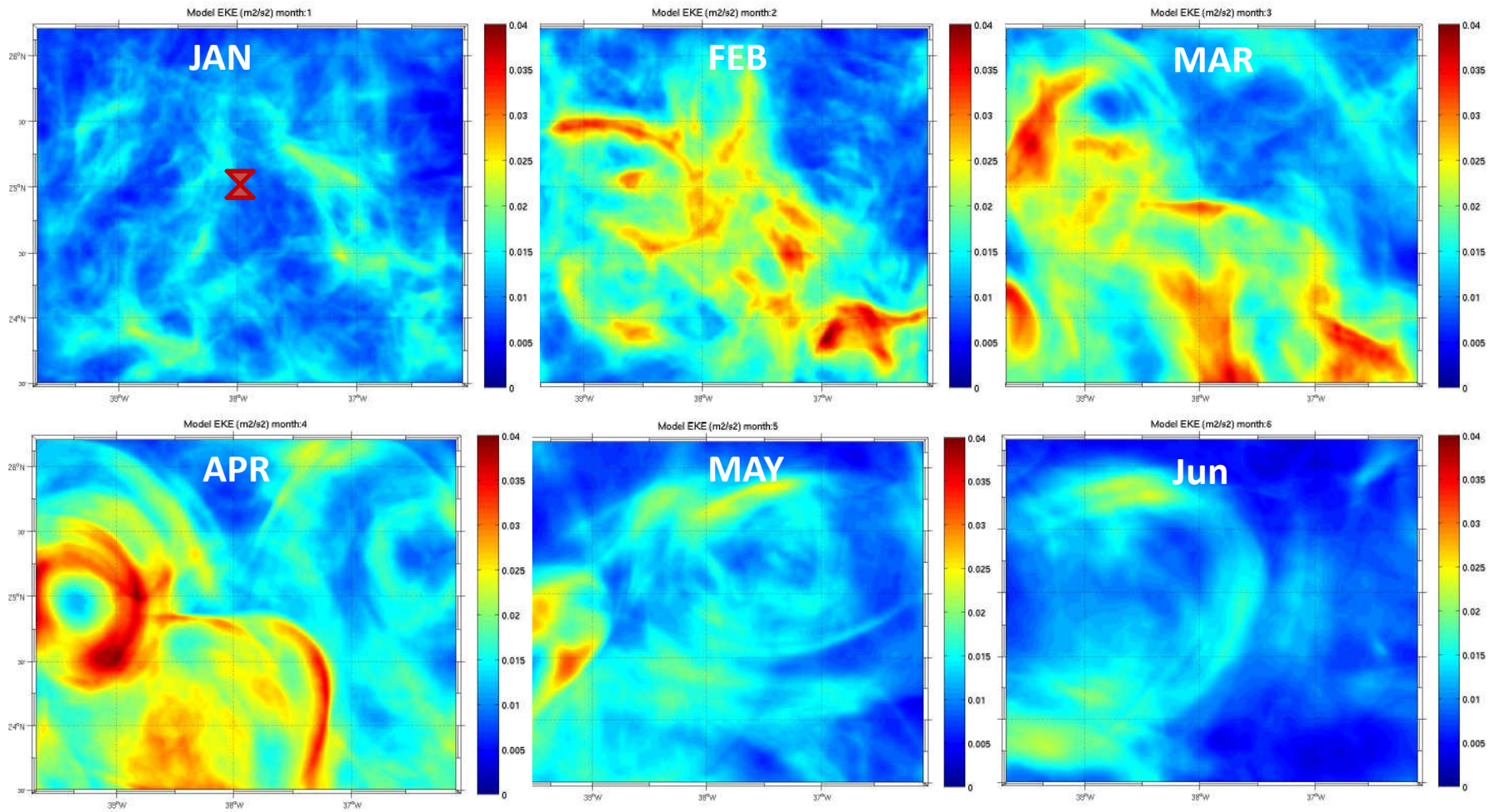
- Three domain nested Regional Ocean Modeling System (ROMS) model
- A horizontal resolution of 9 km (L0), 3 km (L1) and 1 km (L2), with 50 vertical levels
- Hourly atmospheric forcing derived from the NCEP Global Forecasting System (NFS) products



Simulation of Eddy Kinetic Energy for 2010-2011

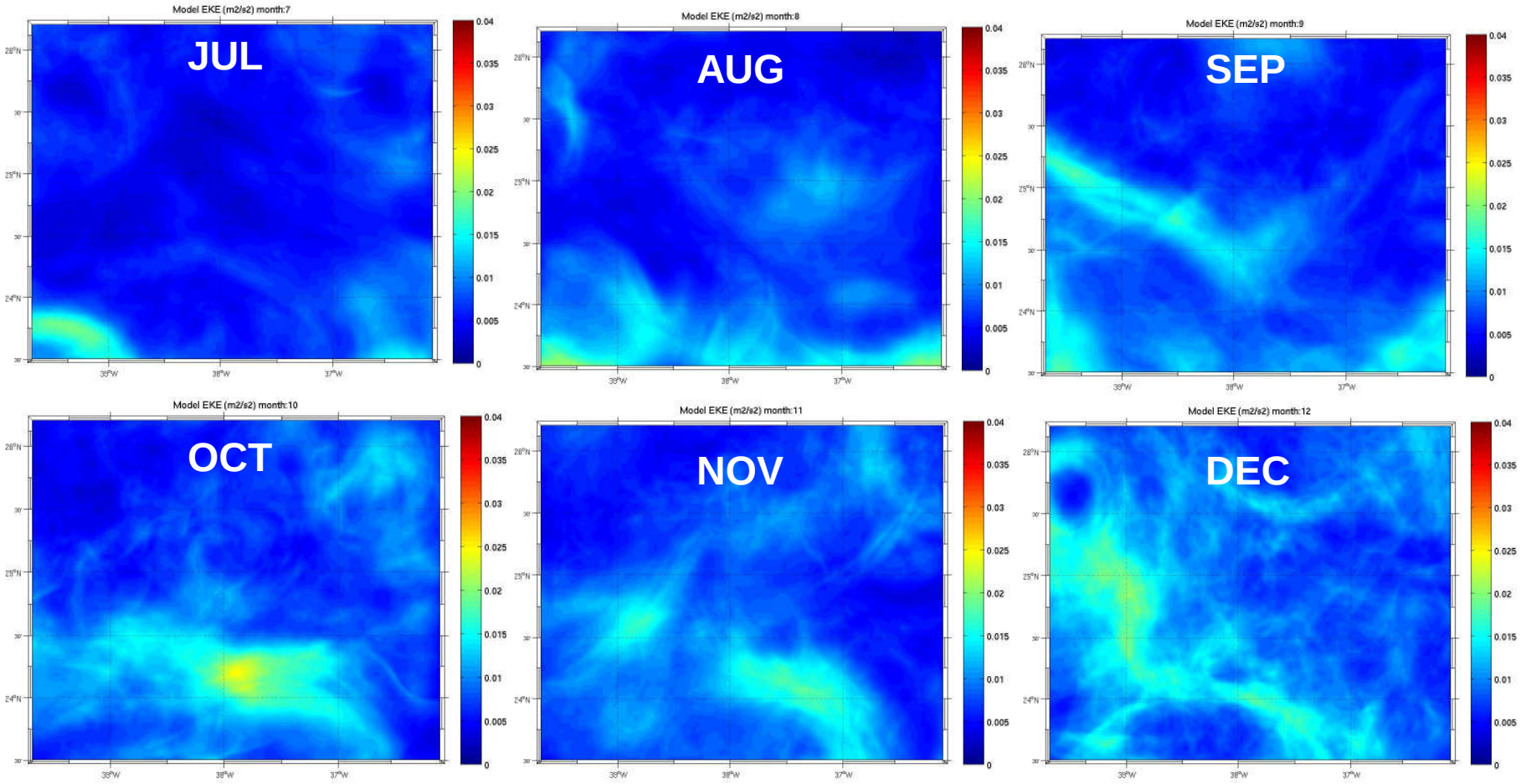
- Hourly atmospheric forcing derived from GFS for 2010-2011
- Removed the multi-year monthly means
- Eddy kinetic energies calculated from surface velocity anomalies to the multi-year monthly mean

Eddy Kinetic Energy in the L2 Domain: January to June

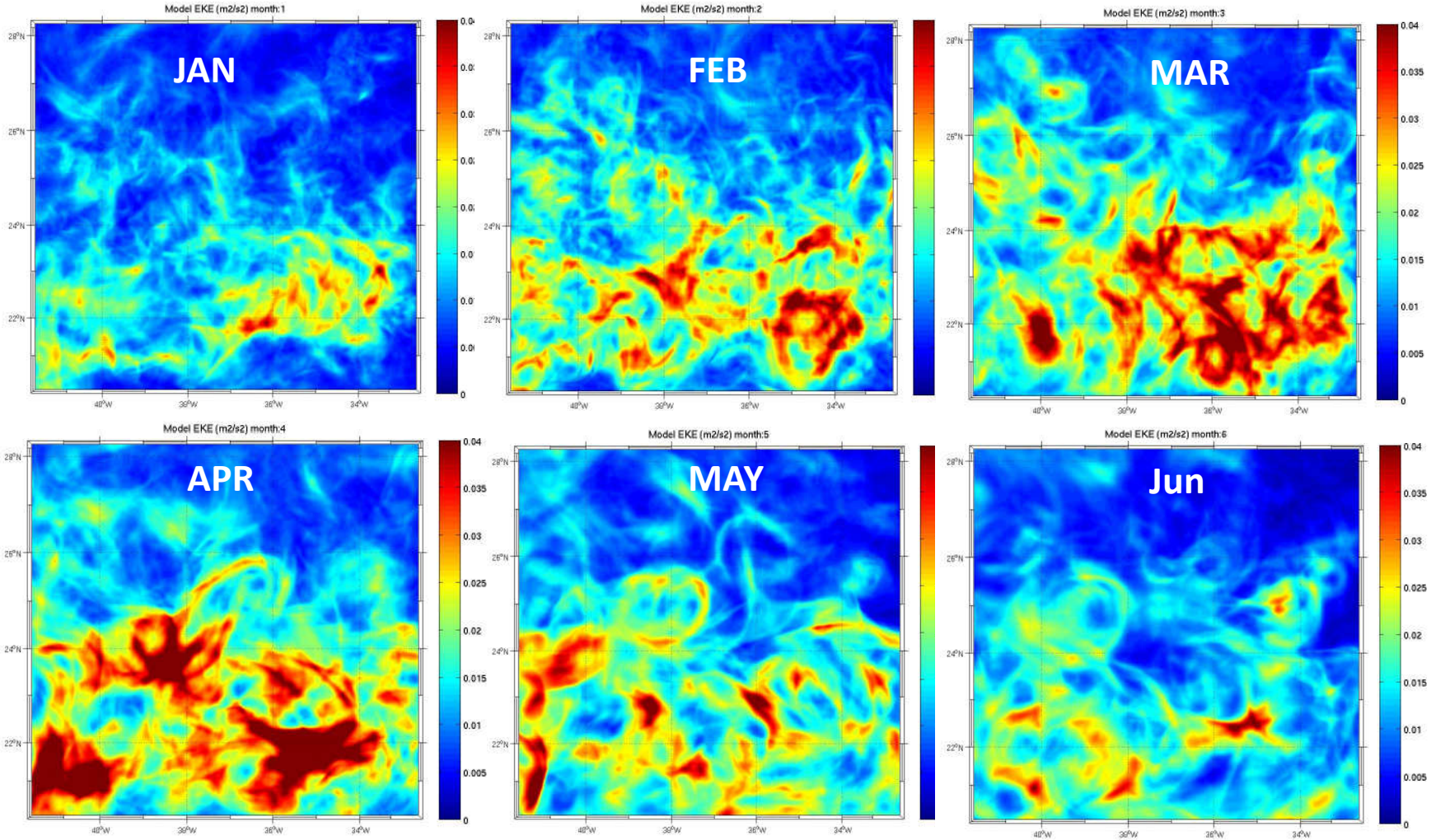


SPURS mooring

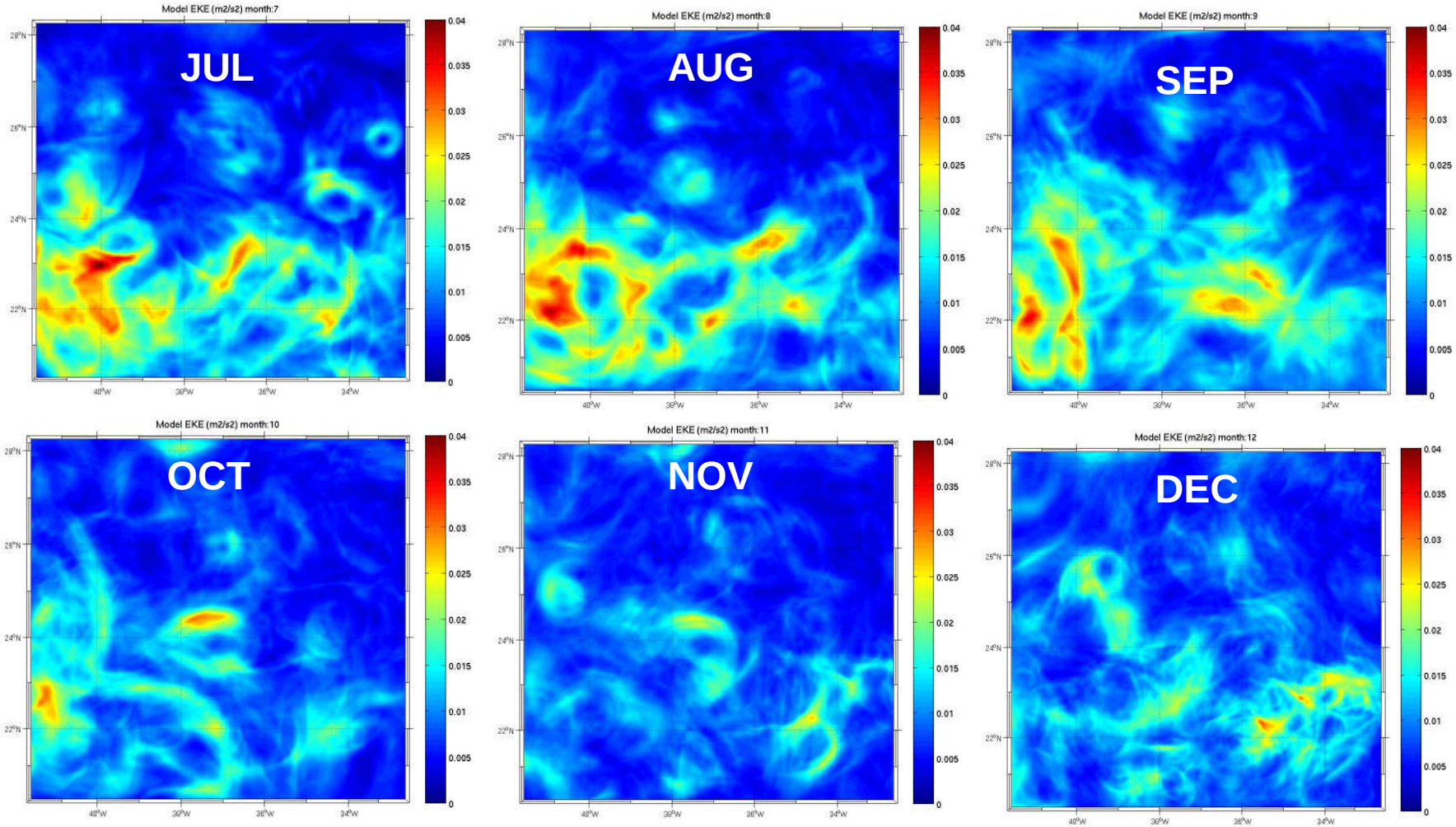
Eddy Kinetic Energy in the L2 Domain: July to December



Eddy Kinetic Energy in the L1 Domain: January to June



Eddy Kinetic Energy in the L2 Domain: July to December



Summary

- The model simulations are consistent with Arnold's suggestion that strongest eddy activities occur in March/April
- The model simulations also show the weakest eddy activities in October/November
- The strongest eddy activities tend to occur in the south-west quarter of the SPURS region
- The model reasonably reproduces the seasonal cycle of eddy activities