Geophysical Research Abstracts,
Vol. 11, EGU2009-12189, 2009
EGU General Assembly 2009

Coupling unstructured grid models to OASIS4

K. Fieg, W. Hiller, J. Behrens, and F. Klaschka
Alfred - Wegener Institute for Polar and Marine Research, Bremerhaven, Germany (Kerstin.Fieg@awi.de)

A key feature, which will critically effect the
acceptance and quality of every earth system model (ESM) in the future,
will be the simple and efficient way to exchange single model components.
From this point of view, OASIS4 is one of the coupling tools with high
potential. On the other hand, the demand to couple model components with
unstructured grids to an existing system of conventional, structured grids
is increasing.

We will discuss the basic mathematical and physical problems and solutions
that arise, if a coupling tool for conventional grids - like OASIS4 - is
expanded to incorporate interfaces for unstructured grids as well.

Furthermore, we will present a concept for a modular, cell integrated
weighting scheme on the sphere which enables mass conservation independent
of the resolution of the source and target grid. The interpolation and
neighbourhood search algorithms are targeted for parallel high performance
computers.