

## A Windowed Fourier Method for Computations on the Sphere

Rodrigo Barcelos Platte

School of Mathematical and Statistical Sciences, Arizona State University, USA, [rbp@asu.edu](mailto:rbp@asu.edu)

A spectral method based on windowed Fourier approximations for computations on the sphere is presented. It relies on domain decomposition, such as in the cubed sphere, and is suitable for adaptive and parallel implementation. One of the advantages of this approach is that computations can be carried out using fast Fourier transforms on a nearly uniform grid. Approximations are obtained on overlapping domains and a global solution is obtained using partition of unity.