Discontinuous versus continuous Galerkin type methods for modeling ocean circulation.

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The shallow-water model is considered as a prototype of the primitive equations and it is employed as a benchmark for numerical schemes to be used in more complex oceanic models. In particular, the shallowwater equations support the propagation of Kelvin, Inertia-gravity and Rossby waves. The presentation will focuse on the discretization of the shallow- water equations using both continuous and discontinuous Galerkin type methods. Compatible finite-element methods, as examples of discrete deRham complexes, will be discussed. The analytical results will be illustrated with the numerical simulation of oceanic waves.