

A FINITE VOLUME VISCOUS-PLASTIC SEA ICE MODEL

Jennifer K. Hutchings (1), Seymour Laxon (2) and Hrvoje Jasak (3)

(1) Climate Physics Group, Dept. Space and Climate Physics, University College London, London, WC1H 0AH, U.K., (2) Climate Physics Group, Dept. Space and Climate Physics, University College London, London, WC1H 0AH, U.K., (3) Dept. Mechanical Engineering, Imperial College London.

Finite volume discretisation of the viscous-plastic sea ice model will be presented. A novel differencing scheme is applied to the transport equations, guaranteeing boundedness of the solution, while minimising the introduction of artificial numerical diffusion. Matrix conditioning, to improve the convergence rate of the momentum equation, is discussed. A twenty year simulation of Arctic sea ice is shown.