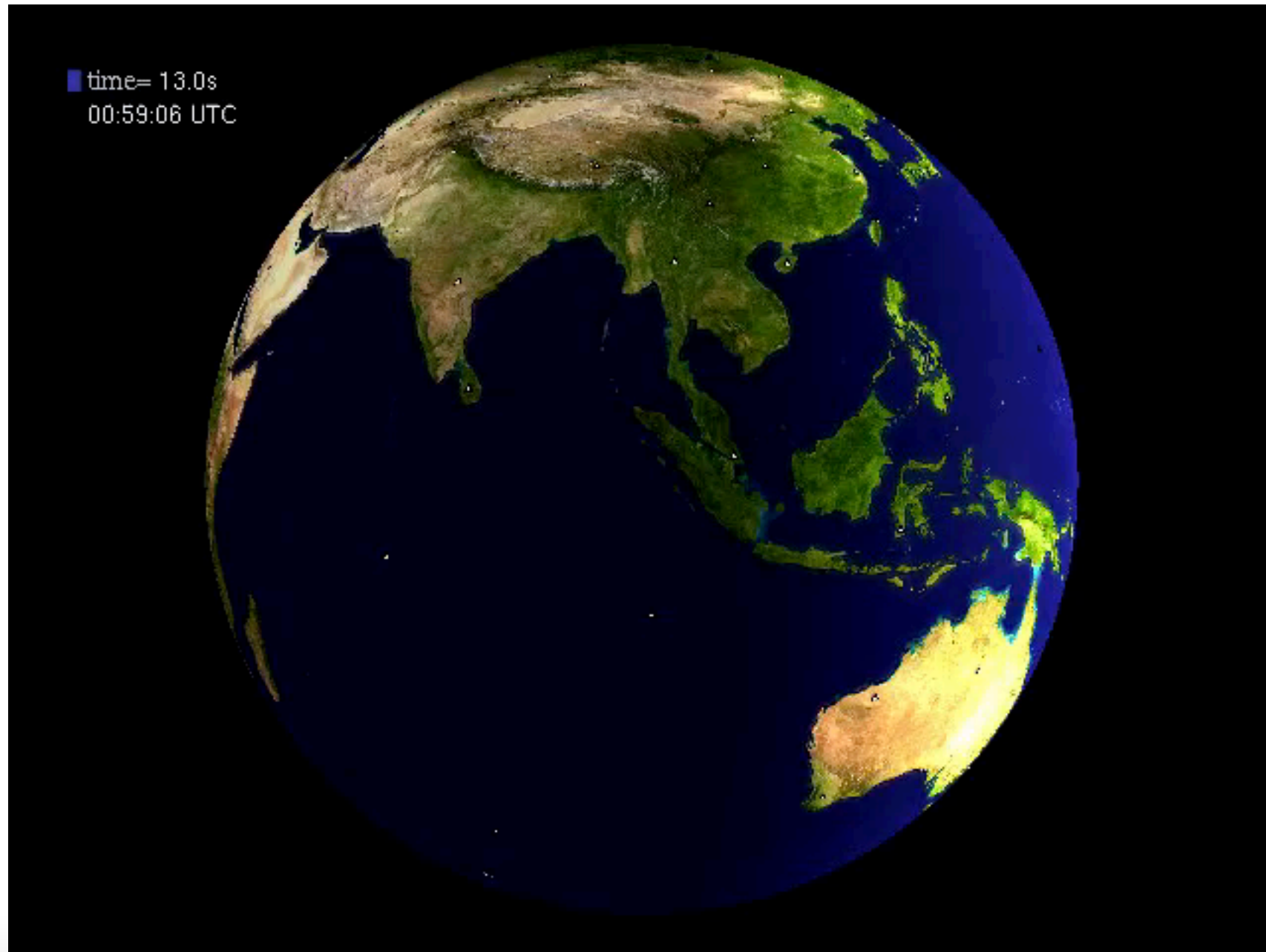# Computational Geophysics ErSE 390C

Computational Geophysics - ErSE 390C

Fall Semester 2016

Schedule: (tentative)

week 1   Introduction to conservation laws for heat flow and wave propagation

week 2   Finite-differences method for heat flow

week 3   Finite-differences method for wave propagation

- No classes - Eid Al-Adha break

week 4   Higher-order Finite-differences method for tsunami waves

week 5   Introduction to Pseudo-spectral method

week 6   Pseudo-spectral method for wave propagation

week 7   Introduction to Finite-element method

week 8   Finite-element method for steady-state heat flow

week 9   Finite-element method for unsteady-state heat flow

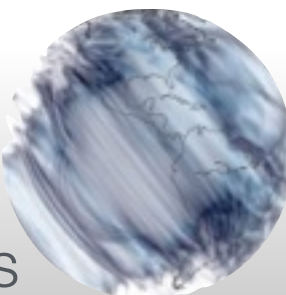week 10 Introduction to spectral-element method

- No classes - semester break

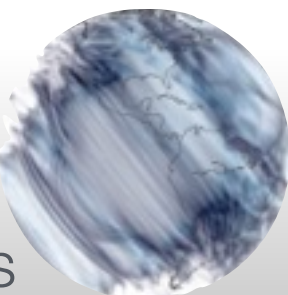week 11 Spectral-element method for heat flow

week 12 Spectral-element method for 1D wave propagation

week 13 Spectral-element method for 2D elastic wave propagation

week 14 Spectral-element method for 3D viscoelastic wave propagation
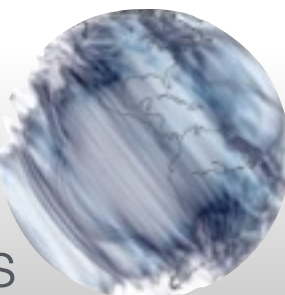
Shallow-water equation

Tsunami

Storm Surge

Computational Geophysics

Dam break

Atmospheric flow

Planetary flows