

In the conditions of exercise 2 b1 from the Isostasy practical (ie orogenic plateau with  $f_c=2$ ), assuming that thermal equilibrium is reached and using thermal parameters of exercise 3 from the Heat flow practical:

1/ Determine the depth of the brittle-ductile transition, in the crust, in the case of extensional tectonics, for strain rates of  $1e-15 \text{ s}^{-1}$ ,  $1e-14 \text{ s}^{-1}$  and  $1e-13 \text{ s}^{-1}$ . Use rheological parameters from slide 09 (cf. rheology lecture).

2/ Compare the gravitational force from exercise 2 b1 (practical on isostasy) with the integrated strengths (at the three strain rates) of the orogenic plateau and discuss.

Advanced students: Calculate the strain rate at which the orogenic plateau deforms.