Modelo termal: ecuaciones y codigo

$$\frac{\partial T}{\partial t} = \kappa \nabla^2 T + \vec{v} \cdot \nabla T - \frac{H}{\rho c_p} \tag{1}$$

Ecuacion de calor 1. La solucion en estado estacionario a esta ecuacion,

$$T(z) = \frac{H\delta^2}{K}\left(e^{\frac{-z_{topo}}{\delta}} - e^{\frac{-z}{\delta}}\right) + \frac{z - z_{topo}}{z_{flla} - z_{topo}}\left[T_{flla} - \frac{H\delta^2}{K}\left(e^{\frac{-z_{topo}}{\delta}} - e^{\frac{-z_{flla}}{\delta}}\right)\right] \tag{2}$$

Para el caso sobre el SLAB (Subducted Lithosphere Asthenosphere Boundary), $T_{flla} = T_{slab}$ en la ecuacion 2,

$$T_{slab} = \frac{Q_0 + \sigma V}{SK}(z_{slab} - z_{topo}) \tag{3}$$

donde,

$$S = 1 + b\sqrt{\frac{(z_{slab} - z_{topo})V sin(\alpha)}{\kappa}} \tag{4}$$

$$\sigma = \mu\left(1 - e^{\frac{(Z_{slab} - Z_{topo})d_2}{(Z_{slab/lab} - Z_{topo})}}\right) \tag{5}$$

$$\mu = \frac{\sigma_{max}}{(1 - e^{d_2})} \tag{6}$$

$$Q_0 = \frac{KT_0}{\sqrt{\pi \kappa a}} \tag{7}$$

Para el caso sobre el LAB (Lithosphere Asthenosphere Boundary), $T_{flla} = T_{lab}$ en la ecuacion 2,

$$T_{lab} = T_0 + G_0 z_{lab} \tag{8}$$

```
for i = 1:3
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```
    if i ≥ 5                    % literate programming replacement
        disp('cool');           % comment with some LaTeX in it: πx^2
    end
    [¬,ind] = max(vec);
    v(end);
    really really long really really long really really long really really ...
        long really really long line % blaaaaaaaa
end
```