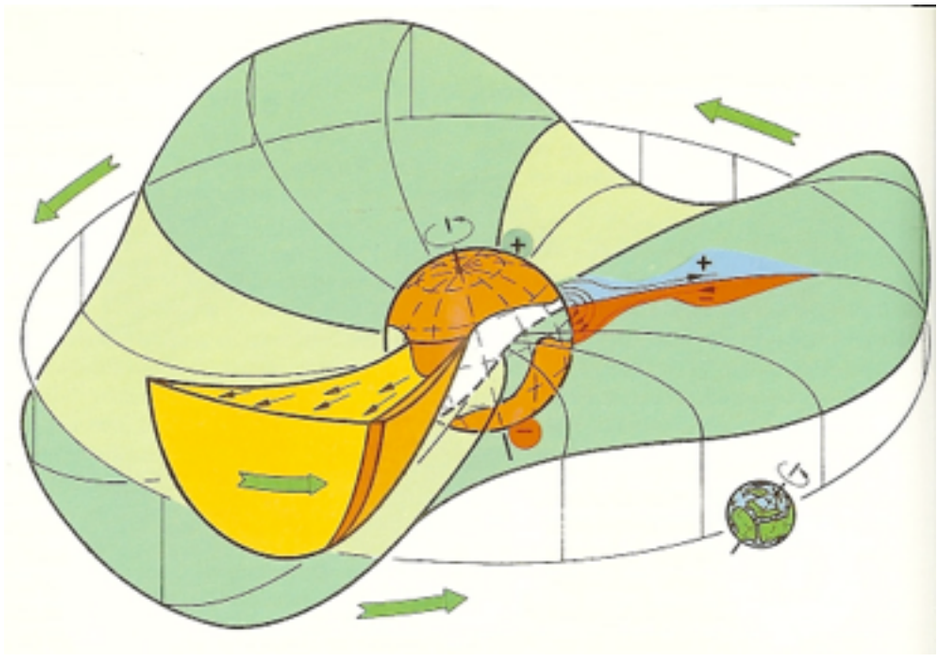
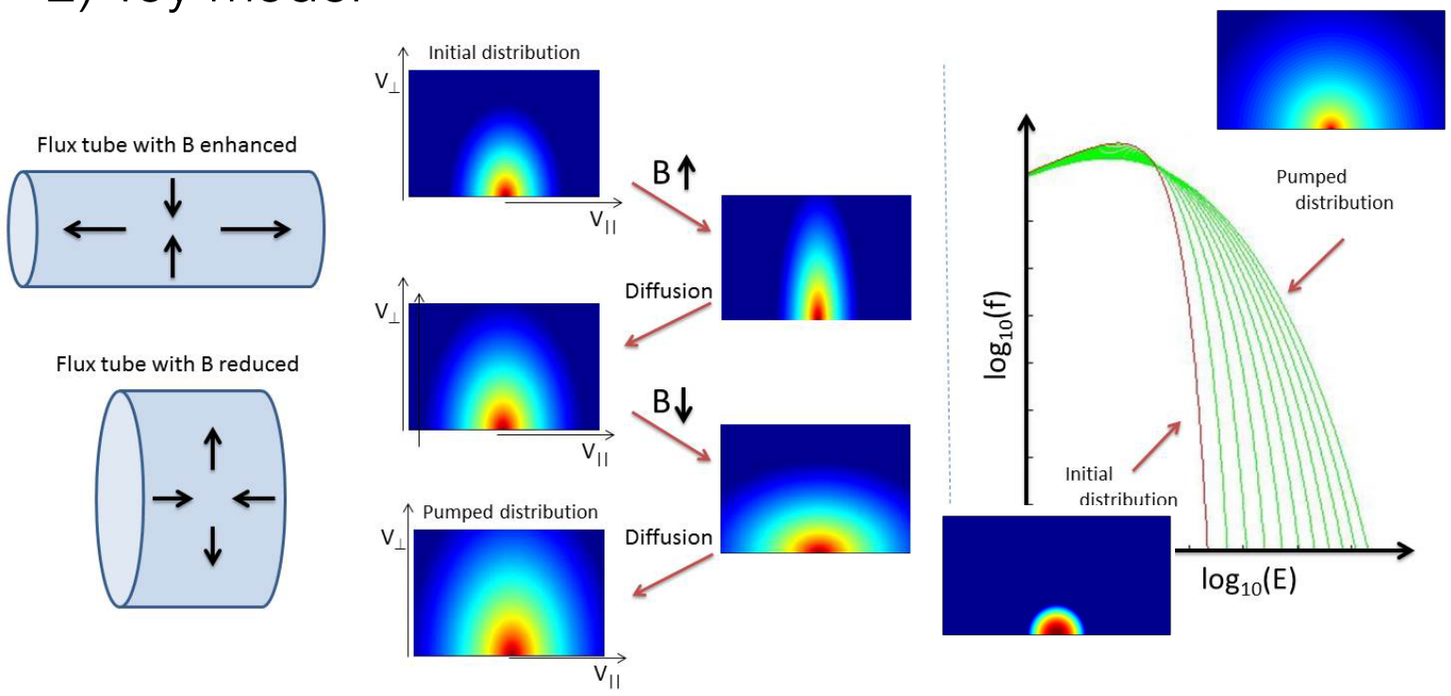
Magnetic pumping as a source of heating in the solar wind

1) Electrons are heated in solar wind



2) Toy model



3) VPIC Simulations and Model Predictions

$$G = \frac{3}{5}\frac{\nu\delta R}{1+36(\nu/\omega)^2}$$

$$f_0 \propto v^\gamma$$

$$\gamma = -\frac{3}{2} - \sqrt{\frac{9}{4}+\frac{c_1}{G}}$$