- scales to be specified:

L	length scale
B_0	magnetic field
ρ_0	mass density

- derived scales:

$n_0 = \rho_0/m_\mathrm{p}$	particle number density
$v_0 = v_{\mathrm{A},0} = B_0/\sqrt{4\pi\ \rho_0}$	Alfvén speed ($v \to M_\mathrm{A}$)
$t_0 = t_{\mathrm{A},0} = L\sqrt{4\pi\ \rho_0}/B_0$	Alfvén time
$\nu_0 = 1/t_0 = B_0/\left(L\sqrt{4\pi\ \rho_0}\right)$	coll. frequency
$g_0 = v_0/t_0 = B_0^2/(4\pi\ \rho_0\ L)$	gravitational acceleration
$p_0 = 2\ p_{\mathrm{mag},0} = (B_0)^2/(4\pi)$	(mag.) pressure
$j_0 = cB_0/(4\pi\ L)$	current density
$\eta_0 = 4\pi L v_0/c^2 = LB_0/c^2\sqrt{4\pi/\rho_0}$	resistivity ($\eta \to 1/R_\mathrm{M}$)
$T_0 = m_\mathrm{p}(v_0)^2/k_\mathrm{B}$	temperature
$Q_0 = n_0 k_\mathrm{B} T_0/t_0 = \rho_0/L\left(B_0/\sqrt{4\pi\ \rho_0}\right)^3$	heating rate
$P_0 = 4\pi\ L\ t_0 Q_0/v_0 = LB_0\sqrt{4\pi\ \rho_0}$	spectral “power”

- constants used:

m_p	proton mass
k_B	Boltzmann’s constant
c	light speed

- redefined variables:

$$\begin{aligned} \mathbf{s} &:= \rho\ \mathbf{v} \\ h_{\alpha,\beta} &:= (\rho\ T_{\alpha,\beta})^{1/\gamma} \quad \text{where} \quad \alpha,\beta \in \{\mathrm{e},\mathrm{p}\} \end{aligned}$$

- equations in reduced, (almost) conservative form:

$$\begin{aligned} \partial_t \rho &= -\nabla\cdot\mathbf{s} \\ \partial_t \mathbf{s} &= -\nabla\cdot\left[\frac{\mathbf{s}\ \mathbf{s}}{\rho} + \left(h_\mathrm{p}^\gamma + p_\mathrm{w} + \frac{B^2}{2}\right)\mathbf{1}\ \mathbf{1} - \mathbf{B}\ \mathbf{B}\right] - \rho\ \mathbf{g} \\ \partial_t \mathbf{B} &= -\nabla\cdot\left(\frac{\mathbf{s}\ \mathbf{B} - \mathbf{B}\ \mathbf{s}}{\rho}\right) + \eta\ \nabla^2\mathbf{B} - (\nabla\eta)\times\mathbf{B} \\ \partial_t h_\alpha &= -\nabla\cdot\left(\frac{h_\alpha}{\rho}\ \mathbf{s}\right) + \frac{\nu_\mathrm{ep}}{\gamma}\ \rho\ h_\alpha\left[1 + \left(\frac{h_\beta}{h_\alpha}\right)^\gamma\right] + \frac{\gamma-1}{\gamma}(h_\alpha)^{1-\gamma}\ Q_\alpha \end{aligned}$$

$$\partial_t P = -\nabla \cdot \left[\frac{P}{\sqrt{\rho}} \left(\frac{\mathbf{s}}{\sqrt{\rho}} + \mathbf{B} \right) \right] - \frac{P}{2} \, \nabla \cdot \left(\frac{\mathbf{s}}{\rho} \right)$$

where

$$\begin{aligned} P(f,r) = \frac{G(r)}{f} \;\Rightarrow\; p_{\mathrm{w}} &= \int_{f_0}^{f_{\mathrm{H}}} P(f)\; df = \ln\left(\frac{f_{\mathrm{H}}}{f_0}\right) G \\ Q_{\mathrm{p}} &= -G \, \left(\frac{\mathbf{s}}{\rho} + \frac{\mathrm{B}}{\sqrt{\rho}} \right) \cdot \nabla(\ln f_{\mathrm{H}}) \\ Q_{\mathrm{e}} &= 0 \\ f_{\mathrm{H}} &= 49.31 \; B \end{aligned}$$