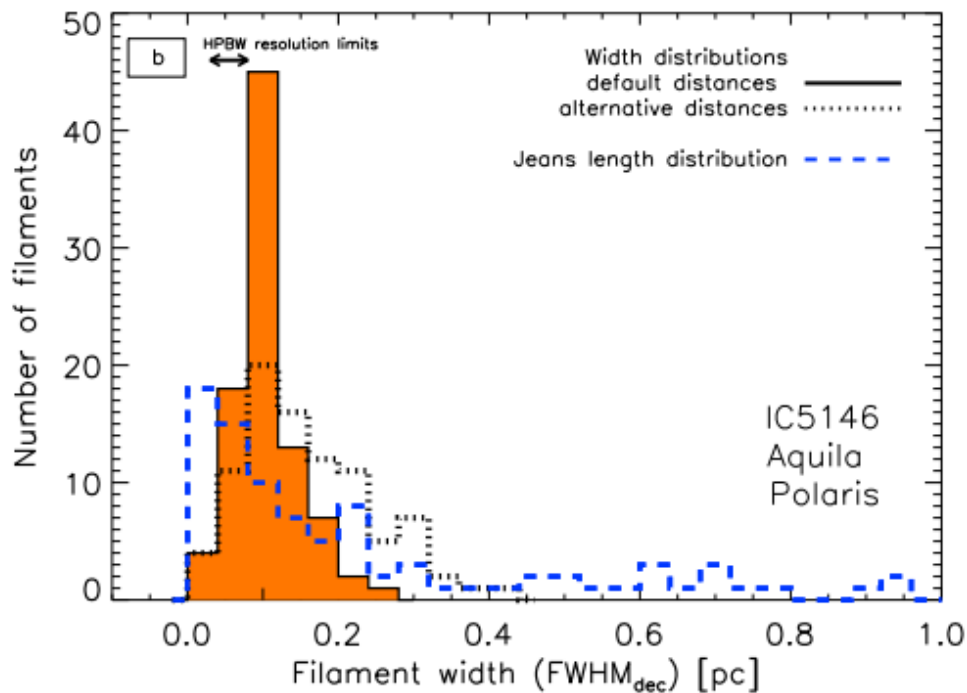


Interstellar filaments: A universal thickness?

High resolution observations with Herschel have shown that the central parts of interstellar molecular filaments have a constant thickness of about 0.1 pc over a large range of column densities



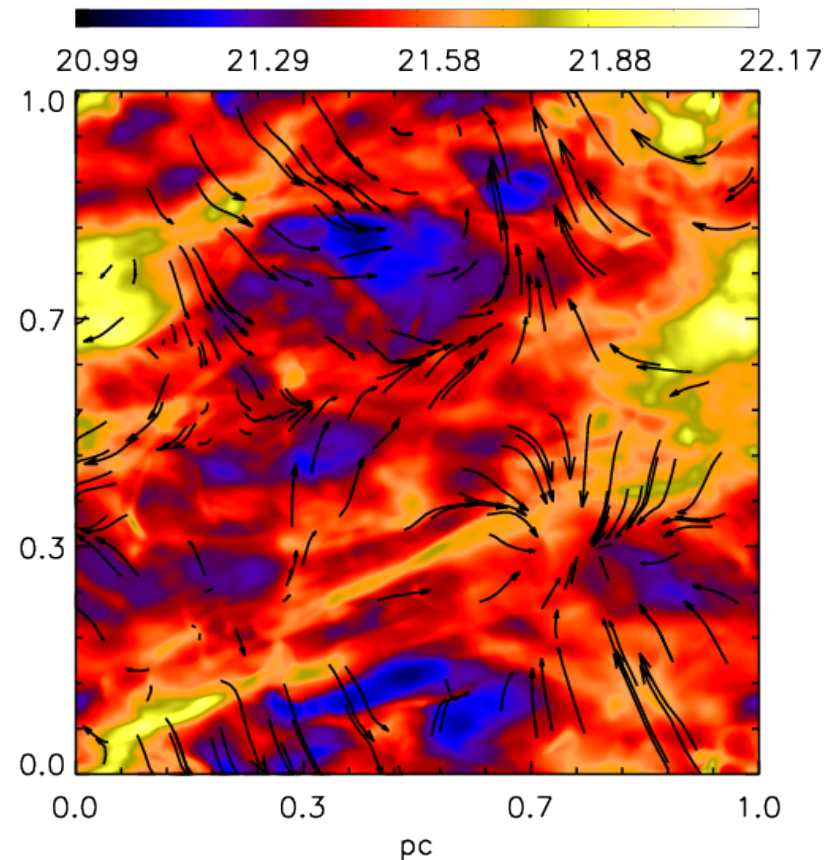
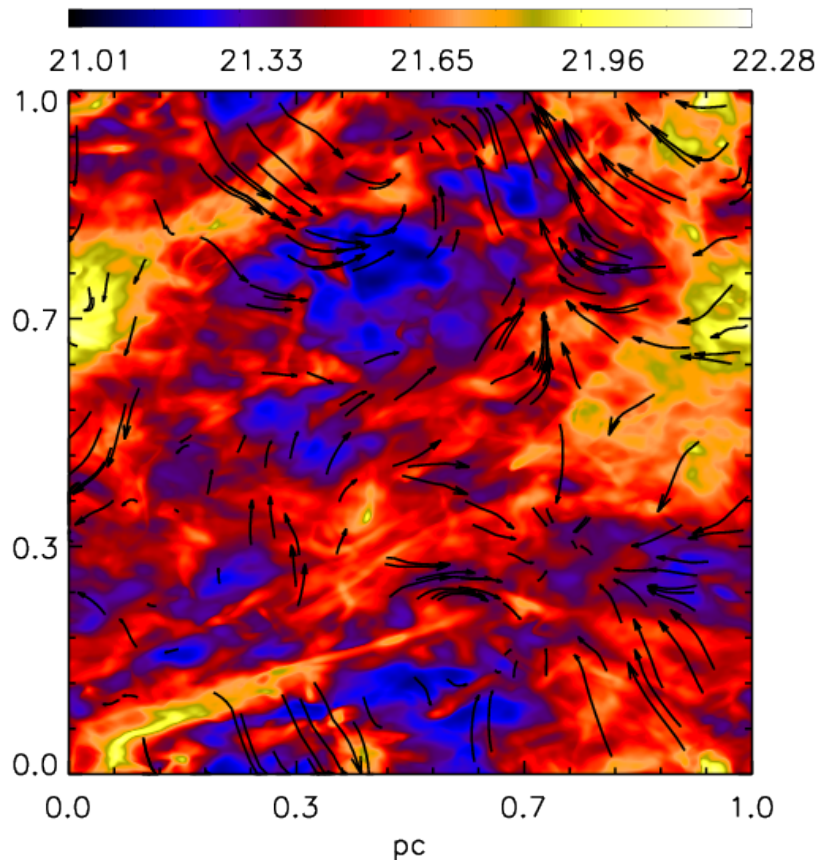
Both turbulence and gravity are self-similar processes down to very small scales, so what can be causing this apparently universal thickness?

Can ambipolar diffusion set a universal filament thickness?

The critical length where Alfvén waves are damped due to ion-neutral friction

$$\lambda_d = \frac{\pi v_A}{\gamma_{AD} \rho_i}$$

We perform 3D ideal and non-ideal MHD simulations of turbulence to see if this results in a characteristic filament thickness



To find out the answer, come see my poster!

Eva Ntormousi