

Contributed Talk

Splinter Activity

SCALING MHD MODELS OF SOLAR ACTIVE REGIONS TO MORE
ACTIVE STARS

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On the Sun we can observe magnetic activity to a detail that is not accessible for other stars. Thus models of active region coronae of a high degree of sophistication can be put to the test in the solar case. However, when considering the Sun alone we are always limited to the (low) magnetic activity found with our star. Therefore, extending these models to a range of stellar activity is a key step. This contribution will describe the basic ingredients required for an appropriate (solar) model, in particular which processes have to be included, as well as the limitations for a self-consistent treatment. The main goal is to describe what information 3D MHD models for solar active regions can provide, and how these models might be scaled up to serve as a description of the corona of a more active star. Some preliminary results for how the heat input into a corona scales with the surface magnetic flux based on 3D MHD experiments will be presented.