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In stars with sufficiently small projected rotational velocities (less than a few km/s), it is often possible to detect signatures of the atmospheric velocity field in line profiles. These signatures may be as subtle as small asymmetries in the profile ("line bisector curvature") or as obvious as profile shapes that strongly depart from those predicted even by simple microturbulence models. We have recently carried out a high resolution survey of sharp-line stars to search for these symptoms of local velocity fields. This poster will report the first results of a comparison of models with the observed profiles.
