

Poster at Splinter Meeting

Splinter D

SHOCK STRUCTURES OF ASTROSPHERES

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The interaction between a supersonic stellar wind and a (super-)sonic interstellar wind has recently gained new interest. We first give an overview of the model efforts including the heliosphere as a special example of a astrosphere. We concentrate here on the shock structures of fluid models, especially of hydrodynamic models. The relatively simple HD models already show a rich shock structure, which might be observable in some objects. Furthermore, we discuss the analytical Rankine-Hugoniot relations and their relevance to observations. We show that the only length scale obtainable is the termination shock distance. For the model including heating and cooling, we present the shock structure, which differs remarkably from that of a single-fluid scenario in the region of the shocked interstellar medium. We find that the heating and cooling mainly is important in the latter region and negligible in the regions dominated by the stellar wind beyond an inner boundary. Finally, we also address the influence of the magnetic field in modeling astrospheres.