

M30a      **On the stability of solar prominences due to ambipolar diffusion**

Kunwar Alkendra Pratap Singh、磯部 洋明、柴田 一成 (京都大学)

Solar prominences are relatively cool, partially ionized and stable plasma structures in the solar atmosphere. There are various theoretical models to explain the stability of prominences. The underlying mechanism in such models is that the prominences are supported against the gravity through upward magnetic force. So, it remains a mystery that how the neutral component, that does not feel the Lorentz force directly, is stabilized against the gravity. As the prominence plasma is partially ionized, ambipolar effect might play an important role in the stability (or instability) of the prominence plasma. There are some evidences of the neutral material diffusion across the field in the solar prominences. The neutral particle diffusion may lead to interchange instability and/or tearing instability. In this paper, we will discuss the role of ambipolar diffusion on stability (or instability) of the prominence plasma.