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## Alfven wave dynamics in the magnetar magnetosphere

*Thursday, 14 December 2023 14:55 (12 minutes)*

Magnetic energy injected into the magnetar magnetosphere is carried by Alfven waves. The dynamics and interactions of Alfven waves are essential in understanding how magnetic energy can be converted into radiations and building theoretical models for magnetar bursts and fast radio bursts. In this talk, I will discuss the dynamics and interactions of Alfven waves, including conversion to fast waves, nonlinear interactions and turbulent dissipation, charge starvation and wave steepening. Especially, nonlinear interactions of Alfven waves can break the MHD condition and lead to efficient particle acceleration. I will also explore the connections to models of fast radio bursts.

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