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Plasma instabilities and cross-field electron transport in low-temperature magnetized plasmas[1] KENTARO HARA, Texas A&M University, SEDINA TSIKATA, CNRS — Anomalous electron transport across magnetic field lines remains poorly understood in low-temperature magnetized plasmas. Recent advancements in experimental capabilities, such as Thomson scattering, strongly indicate the presence of plasma waves, which are likely driven by plasma instabilities. The electron confinement is reduced by the fluctuations, particularly in the E×B direction, resulting in anomalous cross-field electron transport. In this talk, we will review various plasma instabilities relevant to low-temperature magnetized plasmas, including electron cyclotron drift instability, modified two-stream instability, ion acoustic instability, and gradient drift instability. Recent progress in Thomson scattering and kinetic theory will be discussed.

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