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Bayesian Techniques for Plasma Theory to Bridge the Gap Between Space and Lab Plasmas[1] CHRIS CRABTREE, GURUDAS GANGULI, ERIK TEJERO, US NRL — We will show how Bayesian techniques provide a general data analysis methodology that is better suited to investigate phenomena that require a nonlinear theory for an explanation. We will provide short examples of how Bayesian techniques have been successfully used in the radiation belts to provide precise nonlinear spectral estimates of whistler mode chorus and how these techniques have been verified in laboratory plasmas. We will demonstrate how Bayesian techniques allow for the direct competition of different physical theories with data acting as the necessary arbitrator.

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