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Test Models of Chorus Frequency Chirping

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Chorus wave frequency chirping remains a challenging fundamental problem in space plasma physics. Various models, such as the sequential triggering model and the "Trap-Release-Amplify" (TaRA) model, have been proposed to understand why chirping occurs and how to estimate the chirping rate. In this work, we will discuss the most fundamental feature of the TaRA model and present a simple numerical test to differentiate between various models. Physical implications of our results will also be discussed.