

Abstract Submitted
for the DPP19 Meeting of
The American Physical Society

Modeling of chirping toroidal Alfvén eigenmodes in NSTX
ROSCOE WHITE, VINICIUS DUARTE, NIKOLAI GORELENKOV, ERIC
FREDRICKSON, MARIO PODESTA, Princeton Plasma Physics Laboratory,
HERB BERK, University of Texas, Austin — Modulation of mode amplitude and
frequency of TAE modes, observed experimentally and referred to as chirping, is
investigated using a guiding center code and a δf formalism. Chirping is observed
as the development in time of Fourier sidebands that move above and below the
nominal mode frequency. Subsequent doubling of the sidebands is also sometimes
observed. Equilibria with conventional positive magnetic shear are used, as well as
NSTX reversed shear cases. The onset of chirping can be triggered by a sudden
increase in mode damping, as can occur by the mode contacting the continuum.

Vinicius Duarte
Princeton Plasma Physics Laboratory

Date submitted: 30 Jun 2019

Electronic form version 1.4