The stability of zonal flows in finite beta tokamak edge plasmas
PARVEZ GUZDAR, ROBERT KLEVA, University of Maryland — The generation
of zonal flow in finite beta plasmas is an active area of research. We have developed a
time-dependent code to investigate the stability of zonal flows in finite beta plasmas.
The code can investigate different profiles of the zonal flow as well as the effects of
magnetic shear. The focus of the investigation will be tokamak edge plasmas where
finite beta effects are enhanced by steep pressure gradients and high safety factor
q. We will present results of the stability of the zonal flows as a function of the two
key dimensionless parameters, the classical ideal ballooning stability parameter and
the diamagnetic parameter. The relevance of this study to edge transport will be
discussed.

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