1099-00-400 **Denis A. Silantyev*** (dsilant@math.unm.edu), **Pavel Lushnikov** and **Harvey Rose**.
Langmuir wave filamentation instability. Preliminary report.

We consider laser-plasma interaction in underdensed collisionless plasma withing the Vlasov-Poisson system. Full 3+3 Vlasov simulation (3 spatial directions and 3 velocity directions) is nearly impossible with the modern computational tools. Instead we consider the reduced model that we call Vlasov Multi-Dimensional model (VMD). VMD model retains full kinetic description along laser direction and utilizes multi-fluid description in transverse direction. Transverse modulational instability of nonlinear Bernstein-Greene-Kruskal (BGK) mode is studied in the framework of VMD model. Numerical results for growth rates of transverse instability are compared to analytically predictions. (Received February 11, 2014)