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Blobs and drift wave dynamics YANZENG ZHANG, SERGEI KRASHENINNIKOV, Univ of California - San Diego, PLASMA PHYSICS GROUP TEAM, PLASMA PHYSICS GROUP TEAM — The modified Hasegawa-Mima equation retaining all nonlinearities is investigated from the point of view of the formation of blobs. The linear analysis shows that the amplitude of drift wave packet propagating in the direction of decreasing background plasma density increases and eventually saturates due to nonlinear effects. Nonlinear modification of time averaged plasma density profile results in the formation of large amplitude modes locked in x-direction but still propagating in y-direction, which resembles experimentally observed chain of blobs propagating in poloidal direction. Such specific density profiles, causing the locking of drift waves can form naturally at the edge of tokamak due to neutral ionization source. As a result, locked modes can grow *in situe* due to plasma instabilities, e.g. caused by finite resistivity. Also modulation instability (in poloidal direction) of locked modes can result in a blob like burst of plasma density.

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