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Time evolution of an edge density profile was obtained by a newly-developed lithium beam probe on JT-60U. After NBI heating, a transition from L to H mode plasmas occurred. The density gradient increased with growth of the density pedestal. The density crashes due to ELMs were also observed. The edge density profiles were reconstructed from the lithium beam emission profiles. (Atsushi KOJIMA *et al.*, Plasma and Fusion Research Vol.5, 015 (2010) <http://www.jspf.or.jp/PFR/>)



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