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Matthew Joseph and **Ron Peled**. *Longest increasing path within the critical strip.*

Consider a Poisson Point Process of intensity one in the two-dimensional square of length n . In Baik-Deift-Johansson (1999), it was shown that the length of a longest increasing path (an increasing path that contains the most number of points) when properly centered and scaled converges to the Tracy-Widom distribution. Later Johansson (2000) showed that all maximal paths lie within the strip of width $n^{2/3+\epsilon}$ around the diagonal with probability tending to 1 as n increases to infinity. We consider the length of maximal increasing paths restricted to lie within a strip of width n^γ when $\gamma < 2/3$ around the diagonal and show that when properly centered and scaled it converges to a Gaussian distribution. We also obtain tight bounds on the expectation and variance which plays a crucial role on the distributional convergence. (Received August 04, 2015)