

# **Anomalous shock fluctuations in TASEP and last passage percolation models**

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We consider the totally asymmetric simple exclusion process with initial conditions and/or jump rates such that shocks are generated. If the initial condition is deterministic, then the shock at time  $t$  will have a width of order  $t^{1/3}$ . We determine the law of particle positions in the large time limit around the shock in a few models. In particular, we cover the case where at both sides of the shock the process of the particle positions is asymptotically described by the Airy<sub>1</sub> process. The limiting distribution is a product of two distribution functions, which is a consequence of the fact that at the shock two characteristics merge and of the slow decorrelation along the characteristics. We show that the result generalizes to generic last passage percolation models.  
Joint work with Peter Nejjar.