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Guillaume Barraquand* (barraquand@math.columbia.edu), Department of Mathematics, Columbia University, 2990 Broadway, New York, NY 10027. *The facilitated exclusion process and random growth in a half space.*

The *facilitated exclusion process* is an interacting particle system on the integer line which is a variant of TASEP. Each particle hops to an empty site on the right at rate 1, but the move is allowed only when the site on the left is occupied. This process was introduced in physics to model the motion of particles in glasses: particles move towards lower density region (exclusion rule), but they move only when stimulated by other neighbouring particles (facilitation rule).

For this process, we will show several limit theorems for the fluctuations of particle positions towards different laws from random matrix theory: GUE, GOE and GSE Tracy-Widom distribution. We will also explain how this process is related to random growth processes in a half space and discuss universal aspects of the effect of the boundary for such systems.

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