Scientific Report
Short Research Visit Eric Cator

My visit to James Martin in Oxford has been very successful. We have worked on two themes: multiple second class particles in a rarefaction fan in both the Hammersley process and in TASEP. On both fronts we managed a breakthrough by combining our expertise on the subject.

In the Hammersley case, we were able to give a precise description of the joint distribution of the asymptotic speed of any finite number of higher class particles, with any deterministic starting configuration.

In the TASEP case, things are slightly more complicated. We know that second class particles are related to competition interfaces in the LPP description of TASEP. We were able to describe the joint distribution of the asymptotic slope of two competition interfaces in an arbitrary initial profile. This required an interesting description of the joint distribution of two Busemann functions on this profile.

All in all we are working on two different papers based on the results of this short visit, and we are grateful to the ESF for granting us this opportunity!

Highest regards,

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