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## Brownian motion from many points to many points which are tangential to a bulk

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### **Abstract**

We compute the probability near  $t = 0$  of non-intersecting Brownian motions entering a window, when starting at time  $t = -1$  and ending at  $t = 1$  of which  $N$  (the bulk) starts from 0 and ends at 0, but a finite number of outliers start and end in such a way as to be tangential at the edge of the bulk. As  $N$  gets large, we thus recover and reinterpret a kernel of Borodin–Peche. We relate this to the problem of Pearcey with inliers and Airy with outliers.

**Joint work with P. Ferrari and P. van Moerbeke.**