## Irreversible hard detection of non-relativistic quantum particles

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Consider the following experiment: a non-relativistic quantum particle is initially prepared with wave function supported in a bounded region  $\Omega$  of physical space, and suppose detectors are placed along the boundary of this region. We allow the wave function to evolve in  $\Omega$  until the particle is detected along the boundary, at which point we record the time and position of detection. If we perform this experiment repeatedly, the Born rule predicts a distribution for the detected positions of the particle. However, a theoretical description for the distribution of detection times has remained an open problem in quantum mechanics. In this talk we present a recent proposal of Tumulka for the detection time distribution and apply the theory of boundary tuples to prove his model is singled out by a short list of physical assumptions.