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Entanglement Harvesting with Inertially Moving Detectors

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We analyze the entanglement harvested from a quantum field through local interactions of a pair of identical Unruh-DeWitt detectors that are moving with relative constant velocity. These detectors are taken to be point-like and have Gaussian switching. For detectors moving in opposite directions we find that the entanglement harvested has a complicated dependence on the detectors' velocities, energy gap, and their cross-over time relative to the peak of their switching. Additionally, we find that for any combination of parameters there is a velocity that globally maximizes entanglement harvesting, and there may be more than one local maximum. Finally, we find that for small time differences and a large enough detector gap, entanglement harvesting is always possible.

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