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Second law of thermodynamics for random walk of quantum particle inapresence ofdetectors IVAN SADOVSKYY, Materials Science Division, Argonne National Laboratory, Argonne, Illinois 60439, USA, GORDEY LESOVIK, L.D. Landau Institute for Theoretical Physics RAS, 117940 Moscow, Russia — We test H-theorem for a several models of particle random walk. We study interaction with a reservoir/detectors and its influence on entropy and found entropy growing in the time for some models and behaving non-monotonically for the others. We discuss the details of the system-reservoir interaction (such as presence of the interference in the system and number of interactions with detector parts) and their impact on the monotonicity of entropy.

Ivan Sadovskyy
Materials Science Division, Argonne National Laboratory,
Argonne, Illinois 60439, USA

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