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**Rohini Kumar** and **Hussein Nasrallah\*** ([hussain.nasrallah@wayne.edu](mailto:hussain.nasrallah@wayne.edu)). *Portfolio optimization near horizon.*

Portfolio optimization is a well-known problem in mathematical finance concerned with selecting a portfolio which maximizes the expected terminal utility of an investor given today's information and subject to some constraints. We approach this problem from a partial differential equations (PDE) perspective. We find a closed-form formula for a portfolio under which the expected utility is asymptotically close to optimal under small time horizon. This is done by analyzing the problem via its associated Hamilton-Jacobi-Bellman (HJB) equation. Specifically, we work with the "marginal HJB equation." We find a classical sub- and super-solution to the marginal HJB equation. A comparison principle argument for a logarithmic transformation of the marginal HJB equation then yields the result. (Received September 22, 2016)