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Chopper Optimization for NPDGamma Experiment MD LATIFUL KABIR, CHRISTOPHER CRAWFORD, University of Kentucky, NPDGAMMA COLLABORATION — The NPDGamma experiment at the spallation neutron source is set up to probe the hadronic weak interaction by measuring parity-violating gamma ray asymmetry in the capture of polarized cold neutrons on protons. In the experiment choppers are used, for example, to allow neutrons of desired wave length, maximize spin flipper efficiency, remove wraparound and minimize depolarization. Then it becomes a challenge to ensure high neutron flux but fulfilling all the above requirements. To address the issue we came up with a model spectrum using an analytical chopper which enables us to optimize the choppers by varying chopper location, opening angle and opening phase to get desired neutron flux.

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