

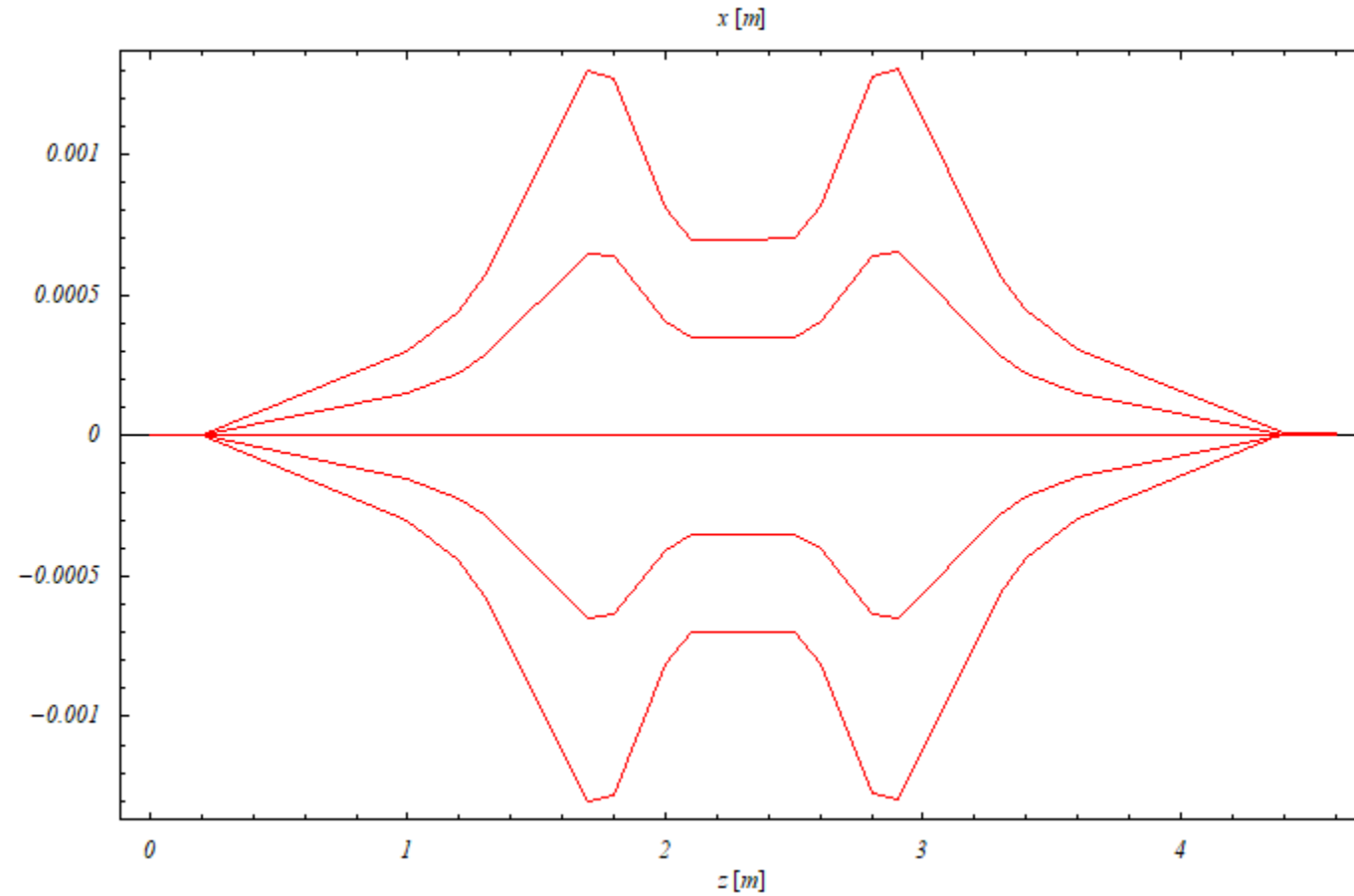
Study of beam dynamics in the Stage 1 arc

J.Pasternak, 27/10/2025

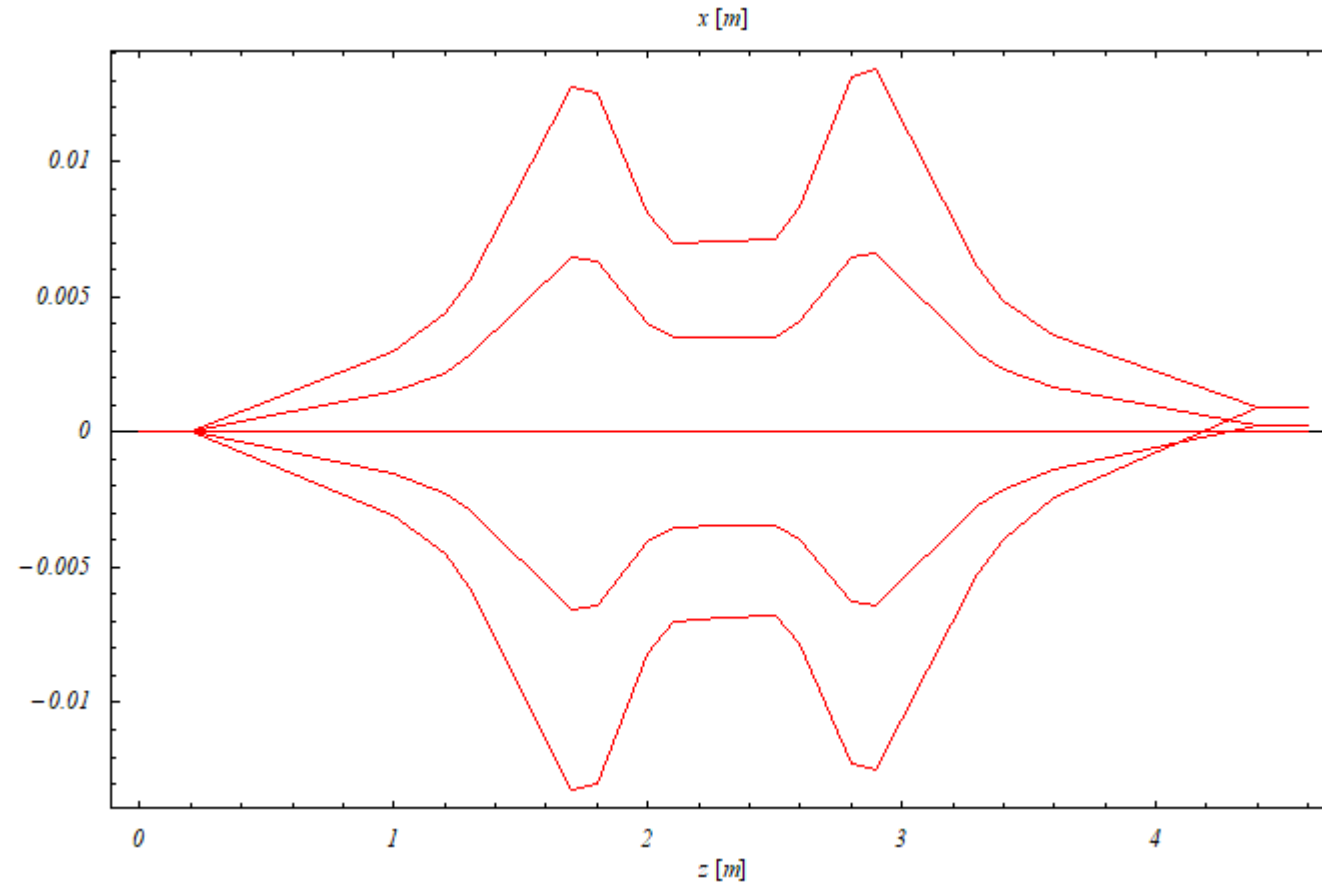
Assumptions

- Hard edge approximation
- Large amplitude and large momentum spread effects taken into account
- Initial emittance 4.06×10^{-6} m
- Tracking with the arc only

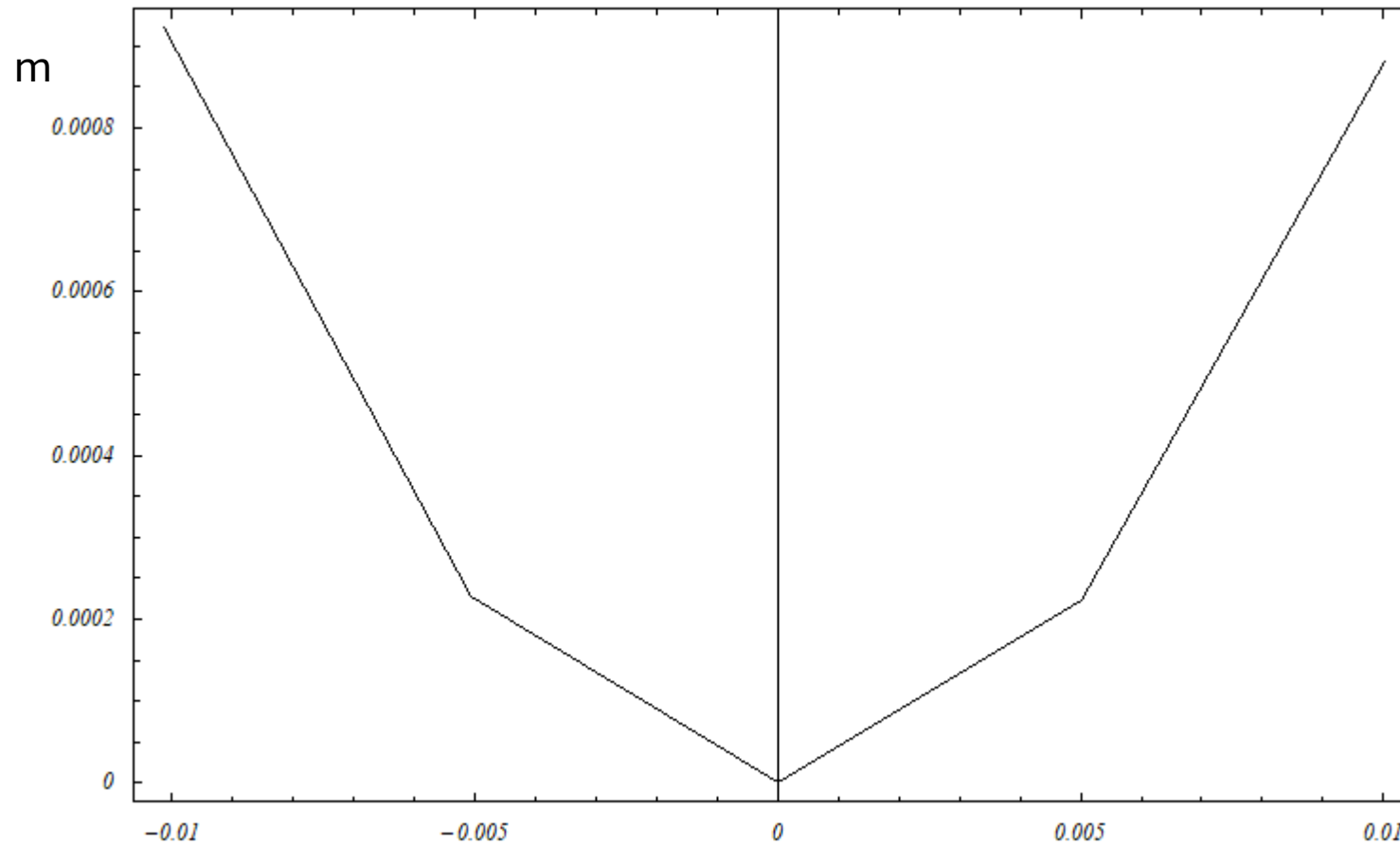
Tracking with small momentum spread



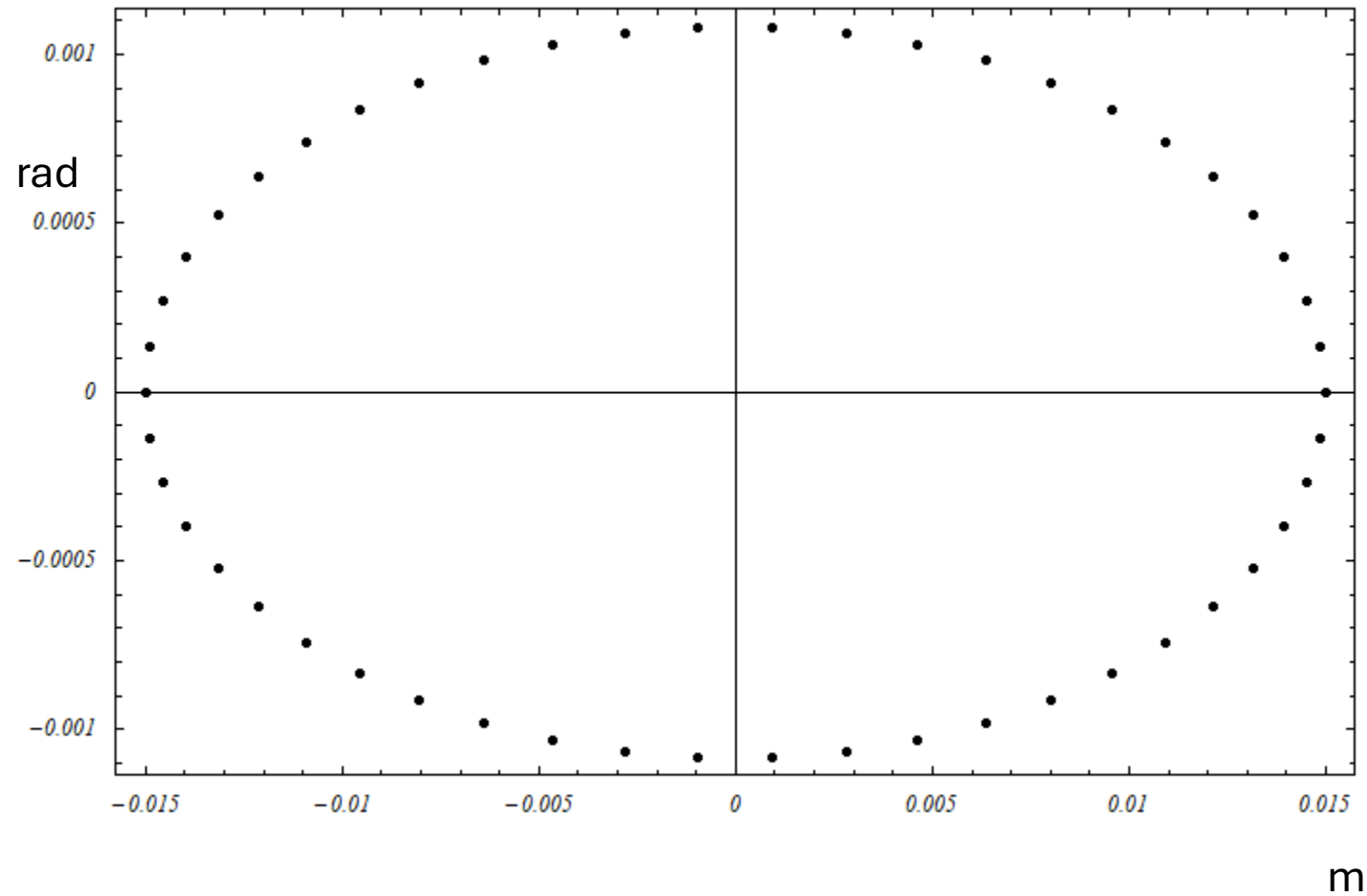
Tracking with large momentum spread



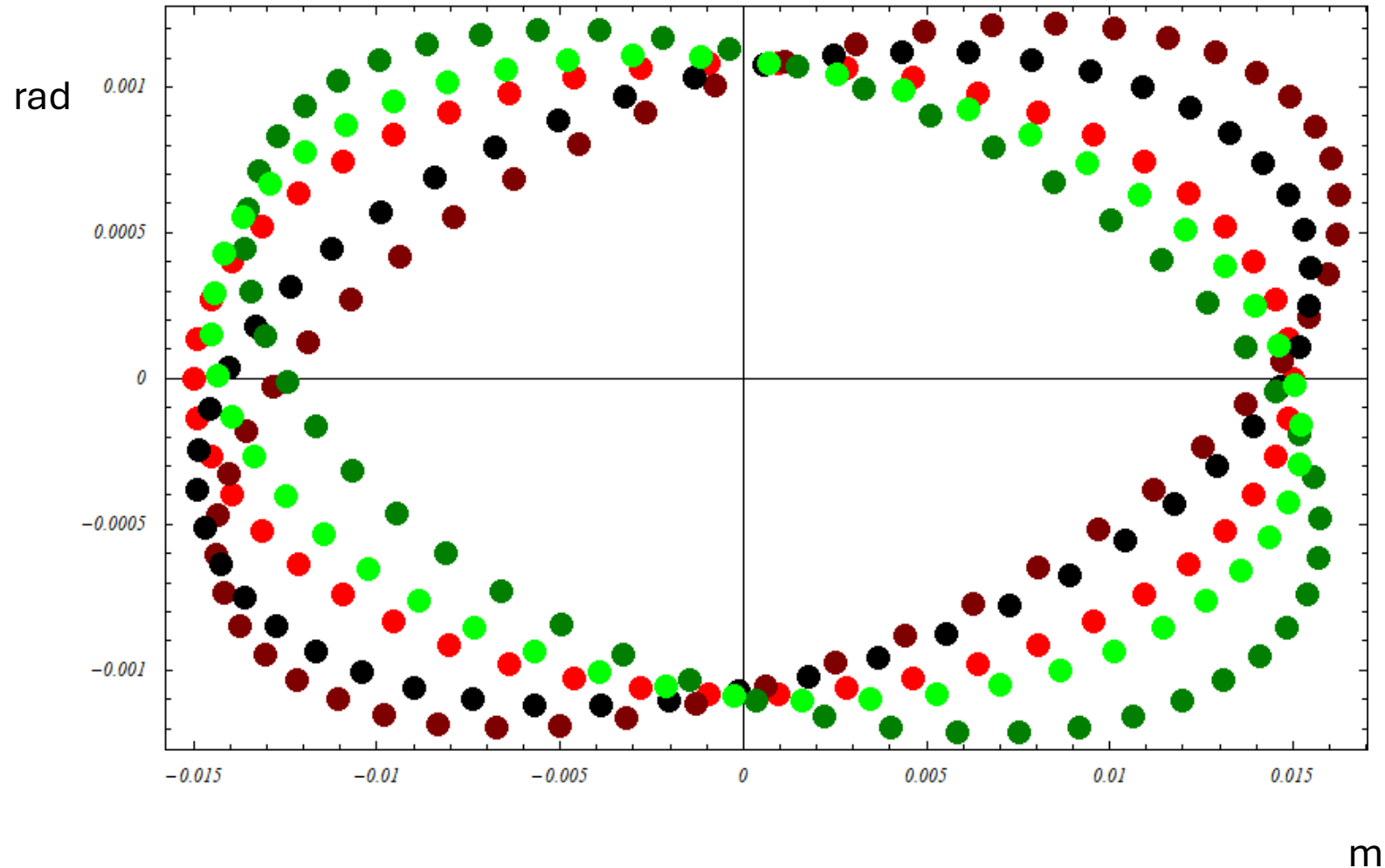
Orbits as a function of relative momentum spread, $D \sim 1 \cdot 10^{-3}$, $D1 \sim 8.9$ m



Initial phase space



Final bending phase spaces for different energies



Final bending phase spaces for different energies

