

**Analytical 1D Method of Increasing the Dynamical Aperture in Storage Rings, V.V. DANILOV**, Budker Institute of Nuclear Physics - An accelerator 1D lattice composed of linear elements and thin sextupoles is considered. The problems of limitation of dynamical aperture due to sextupoles are well-known. This paper presents a method of how to make dynamical aperture much larger by adding the nonlinear fields of higher order in sextupoles. For the thin lenses model the dynamical aperture can be made infinite in principle. All the expressions for nonlinear kicks are presented in simple analytical form, determined by the linear lattice and sextupole strengths.