

Parabolic implosion in the parameter space of cubic polynomials

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Parabolic implosion is a remarkable phenomenon in complex dynamics. It describes the enrichment of Julia sets when the parabolic point of a rational map is perturbed. It is also natural to study the parabolic implosion in parameter spaces. In particular, when one perturbs properly the family of cubic polynomials having a stable parabolic fixed point into nearby families, the enrichment of bifurcation loci occurs. We investigate the topology of such enrichment in the parameter space and relate it to the corresponding enrichment of Julia sets of quadratic polynomials, the latter of which has been studied systematically by P. Lavaurs in the 80s.

Orateur: ZHANG, Runze