A PARAMETER SPACE OF CUBIC NEWTON MAPS

KHUDOYOR MAMAYUSUPOV

1. abstract

A one complex parameter space of cubic rational Newton maps with two persistent superattracting fixed points and a persistent parabolic fixed point is considered. Every such a map has a single "free" critical point. Topological properties of the open components of the parameter plane for which the free critical point of a map belongs to attracting or parabolic basins are studied. Namely, it is proved that every such a component is an open topological 2-cell with a unique center, where the critical points of the map are in a minimal critical orbit relation. For the principal parabolic component characterized by maps with a free critical point belonging to the immediate parabolic basin, the quasiconformal conjugacy classes were explicitly constructed.

HSE University, Faculty of Mathematics
Email address: kmamayusupov@hse.ru