

∫ MATEMATIČNI KOLOKVIJI ∫

Parabolic implosion and wandering domains

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In discrete dynamical systems one considers orbits of selfmaps $f : X \rightarrow X$. More generally one can consider a family of selfmaps $f_\lambda : X \rightarrow X$, depending on one or more parameters $\lambda \in \Lambda$. This raises natural questions about the dependence of dynamical behavior on the parameter such as: do small changes in λ lead to wildly different dynamical behavior? Or does the opposite hold: are all nearby maps in some sense qualitatively similar?

In this talk we will look at the family of complex polynomials of the form $f_\lambda(z) = z + z^2 + \lambda$ and describe the phenomenon known as “parabolic implosion”. We will describe how this phenomena is related to the questions above and its relevance for recent breakthroughs in the area of complex dynamical systems in higher dimensions.



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