Pseudoconvex domains with Hölder boundary are hyperconvex (based on a paper by Bo-Yong Chen)

Żywomir Dinew

Hyperconvexity of a domain in $\mathbb{C}^n$ is defined as the existence of a bounded plurisubharmonic exhaustion function. Although not a classical notion, hyperconvexity has attracted much interest throughout the years, since hyperconvex domains enjoy many properties, not satisfied by general pseudoconvex domains. It is therefore desirable to distinguish which domains are hyperconvex. It has been proved that domains with $\mathcal{C}^2$, $\mathcal{C}^1$ and Lipschitz boundaries are hyperconvex, respectively by Diederich-Fornaess (1977), Kerzman-Rosay (1981) and Demailly (1987). In this talk I present a further development - a recent result by Bo-Yong Chen, that Hölder continuity of the boundary is also a suffiecnt condition for hyperconvexity. Hölder continuity of the boundary is understood in the sense that the boundary is locally a graph of Hölder continuous function.