OKA PROPERTIES OF BALL COMPLEMENTS

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A complex manifold is said to be *Oka* if it satisfies any of several equivalent *Oka properties*, each stating that there exist many holomorphic maps into the manifold from complex affine space $\mathbb{C}^n$ (or, more generally, from Stein manifolds). As such, Oka manifolds can be considered natural targets of holomorphic functions, in duality to the natural sources of holomorphic functions, the Stein manifolds.

Many questions remain open about the fundamental properties of Oka manifolds. One outstanding example is that, despite $\mathbb{C}^n$ being the simplest example of an Oka manifold, we do not know whether it remains Oka after removing the closed unit ball $\overline{\mathbb{B}}$.

I will speak on joint work with Franc Forstnerič in which we give a partial answer to this question by showing that holomorphic maps into $\mathbb{C}^n \setminus \overline{\mathbb{B}}$ from Stein sources of dimension less than n satisfy the basic Oka principle with approximation and interpolation. Along the way we will meet topics from several of the lecture series being given at the School this fortnight.

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