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Polynomially convex embeddings of even-dimensional compact manifolds

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Abstract. The totally-real embeddability of any m-dimensional compact smooth manifold M into $\mathbb{C}^n$, $n \geq \lfloor 3m/2 \rfloor$, has several consequences: the genericity of polynomially convex embeddings of M into $\mathbb{C}^n$, the existence of n smooth generators for the Banach algebra $\mathcal{C}(M)$, the existence of nonpolynomially convex embeddings with no analytic disks in their hulls, and the existence of special plurisubharmonic defining functions. We show that these results can be recovered even when m is even and $n = \lfloor 3m/2 \rfloor - 1$, $m > 2$, despite the presence of complex tangencies, thus lowering the known bound for the optimal n in these (related but inequivalent) questions.

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