

APPROXIMATION AND TRACTABILITY OF ISOTROPIC SOBOLEV EMBEDDINGS WITH
INCREASING SMOOTHNESS

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Let $H^s(\mathbb{T}^d)$ be the isotropic Sobolev space of smoothness $s > 0$ on the d -dimensional torus. In the talk the influence of increasing smoothness on the approximation problem for the embeddings $H^{s(d)}(\mathbb{T}^d) \hookrightarrow L_2(\mathbb{T}^d)$, $d \in \mathbb{N}$, is studied. More precisely, I will give necessary and sufficient conditions for strong polynomial, polynomial, quasi-polynomial, weak and uniformly weak tractability in terms of growth conditions on the smoothness parameters $s(d)$ as $d \rightarrow \infty$.