Tractability of approximation of ridge functions

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We give an overview of recent results on approximation of ridge functions $f(x) = g(a \cdot x)$. As the class of ridge functions is non-linear, number of interesting questions appear. We present, and analyse, several algorithms for recovery of such functions, study their numerical performance and their optimality. Surprisingly, nearly all sorts of tractability appear when trying to approximate ridge functions in high dimension from a limited number of its function values.

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