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*Smooth approximation in weighted Sobolev spaces*

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**Abstract:** We give necessary and sufficient conditions for the equality  $H = W$  in weighted Sobolev spaces. We also establish a Rellich-Kondrachov compactness theorem as well as a Lusin type approximation by Lipschitz functions in weighted Sobolev spaces.

**Keywords:** weighted Sobolev spaces, Poincaré inequality

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