

The thesis consists of two papers and one preprint. The two papers are devoted to the approximation properties of Lipschitz-free spaces. In the first paper we prove that the Lipschitz-free space over a doubling metric space has the bounded approximation property. In particular, the Lipschitz-free space over a closed subset of \mathbb{R}^n has the bounded approximation property. We also show that the Lipschitz-free spaces over ℓ_1 and over ℓ_1^n admit a monotone finite-dimensional Schauder decomposition. In the second paper we improve this work and obtain even a Schauder basis in the Lipschitz-free spaces over ℓ_1 and ℓ_1^n . The topic of the preprint is rigidity of ℓ_∞ and ℓ_∞^n with respect to uniformly differentiable mappings. Our main result is a non-linear analogy of the classical result on rigidity of ℓ_∞ with respect to non-weakly compact linear operators by Rosenthal, and it generalises the theorem on non-complementability of c_0 in ℓ_∞ due to Phillips.