THE BANACH–STEINHAUS UNIFORM BOUNDEDNESS PRINCIPLE FOR OPERATORS IN BANACH–KANTOROVICH SPACES OVER L^0

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We consider a vector-valued version of the Banach–Steinhaus uniform boundedness principle for universally complete Banach–Kantorovich spaces over the ring of measurable functions. We prove that, if a family of bounded linear operators in a universally complete Banach–Kantorovich space is pointwise bounded, then it is uniformly bounded. We also present applications to weak convergence and weak boundedness in universally complete Banach–Kantorovich spaces.

Key words and phrases: Banach–Kantorovich space, measurable Banach bundle, vector-valued lifting, cyclically compact set.

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