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# Γ-CONVERGENCE OF PAIRS OF DUAL FUNCTIONALS

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We consider a slightly modified notion of Γ-convergence of convex functionals in uniformly convex separable Banach spaces. More precisely, we follow the approach by V.V. Zhikov [1] and consider a uniformly convex separable Banach space $X$ and its closed subspace $V$, and we say that a sequence $\{F_j\}$ Γ -converges to $\tilde{F}$ if

$$\tilde{F}(x) = \inf\{\liminf_{j\to\infty} F_j(x+v_j) \;\mid\; \{v_j\} \subset V,\, v_j \rightharpoonup 0 \; \textit{weakly as } j \to \infty\}. \tag{1}$$

We establish that under standard coercitivity and growth conditions the Γ -convergence of a sequence of convex functionals $\{F_j\}$ to $\tilde{F}$ implies that the corresponding sequence of dual functionals $\{F_j^*\}$ converges in an analogous sense to the dual to $\tilde{F}$ functional $(\tilde{F})^*$ .

**REFERENCES**

[1] V.V. Zhikov. Questions of convergence, duality and averaging for functionals of calculus of variations. *Izv. Akad. Nauk SSSR, ser. Math.*, **47** :961-998, 1983.(in Russian)