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Evolution equations associated with (p, q) -convex functions and (p, q) -monotone operators.

(English) [Zbl 0582.49005](#)

Ric. Mat. 33, 81-112 (1984).

The notions of (p, q) -convex functions and (p, q) -monotone operators introduced by *E. De Giorgi*, *A. Marino* and *M. Tosques* [Atti Accad. Naz. Lincei, VIII. Ser., Rend., Cl. Sci. Fis. Mat. Nat. 73, 6-14 (1982; [Zbl 0521.49011](#))] are very useful in order to deal with some evolution problems, in the case that nonconvex unilateral constraints are considered (see e.g. *A. Marino* and *D. Scolozzi* [Boll. Unione Mat. Ital., VI. Ser., B 6, 1-31 (1983; [Zbl 0567.35005](#))]). In the present paper the authors continue and complete the study they already started in a previous paper [Ric. Mat. 32, 285-319 (1983; [Zbl 0555.49007](#))], where they proved many general properties of these objects. In particular, here they give some existence theorems for evolution equations associated with (p, q) -monotone operators, moreover they deal with the Γ -convergence of (p, q) -convex functions.

Reviewer: [A. Salvadori](#)

MSC:

- [49J27](#) Existence theories for problems in abstract spaces
- [49J45](#) Methods involving semicontinuity and convergence; relaxation
- [54A20](#) Convergence in general topology (sequences, filters, limits, convergence spaces, nets, etc.)
- [35G10](#) Initial value problems for linear higher-order PDEs
- [35K25](#) Higher-order parabolic equations
- [47H05](#) Monotone operators and generalizations

Cited in **9** Documents

Keywords:

[gamma convergence](#); [\(p,q\)-convex functions](#); [\(p,q\)-monotone operators](#); [existence theorems for evolution equations](#)