Title: Semi-group generated by evolution equations associated with monotone vector fields

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In this paper, we consider the following system:

$$\begin{cases} -x'(t) \in Ax(t), \\ x(0) = x_0 \in M, \end{cases} \tag{1}$$

where M is a Hadamard manifold, and $A : M \to TM$ is a possibly multi-valued monotone vector field. We study the asymptotic behavior of the semi-group generated by (1) for general monotone vector fields and some special monotone vector fields related to fixed point and convex optimization theory. Convergence of the semigroup in the nonhomogeneous case is also presented.

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