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A FUNCTIONAL METHOD APPLIED TO OPERATOR EQUATIONS

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ABSTRACT. We consider second order hyperbolic equations with unbounded operator's coefficients possessing time dependent domain of definition in a Hilbert space. Existence and uniqueness of the strong generalized solution are studied. The proofs rely on a generalization of the well known energy integral method. First, we derive a priori estimates for the strong generalized solutions with the help of Yosida operator approximation. Then, using previous results, we show that the range of the operators generated by the posed problem is dense.

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