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Method of Lines to Hyperbolic Integro-Differential Equations in $\mathbb{R}^n$

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Abstract: In this work we consider a hyperbolic integro-differential equation in $\mathbb{R}^n$. We reformulate it into an evolution equation in a suitable Hilbert space and establish the existence and uniqueness of a strong solution using the method of lines and the theory of semigroups of contractions in a Hilbert space.

Keywords: *Wave equation; semigroups; contractions; method of lines; strong solution.*

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