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Weak solutions to Neumann discrete nonlinear system of Kirchhoff type

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ABSTRACT

We prove the existence of weak solutions for discrete nonlinear system of Kirchhoff type. We build some Hilbert spaces with suitable norms. We define the notion of weak solution corresponding to the problem (1.1). The proof of the main result is based on a minimization method of an energy functional J.

RESUMEN

Probamos la existencia de soluciones débiles para sistemas discretos no-lineales de tipo Kirchhoff. Construimos algunos espacios de Hilbert con normas apropiadas. Definimos la noción de solución débil correspondiente al problema (1.1). La demostración del resultado principal se basa en un método de minimización de un funcional de energía J.

Keywords and Phrases: Nonlinear difference equations, anisotropic nonlinear discrete systems, minimization methods, weak solutions.

2010 AMS Mathematics Subject Classification: 47A75; 35B38; 35P30; 34L05; 34L30.

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