

Abstract

A functional analytic method is used to prove a theorem which establishes the existence and the uniqueness of a bounded solution of a class of linear delay and advanced partial difference equations in the Hilbert space $l^2_{\mathbb{N} \times \mathbb{N}}$ and the Banach space $l^1_{\mathbb{N} \times \mathbb{N}}$. A bound of the solution is also given. Some known linear partial difference equations, which appear in applications, are studied as particular cases of the theorem.