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ON THE RELATION BETWEEN CONSISTENT AND NON-CONSISTENT INITIAL CONDITIONS OF SINGULAR DISCRETE TIME SYSTEMS

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Abstract. In this article we focus our attention on the relation between consistent and non-consistent initial conditions of a class of singular linear discrete time systems. First we analyze how both types of initial conditions are connected to the column vector space of the finite and the infinite eigenvalues of the related to the singular system matrix pencil and after we prove that a non-consistent initial condition can be viewed as the orthogonal projection of the sum of a consistent with a non-consistent initial value over a certain subspace.

Keywords. singular, linear, discrete time system, consistent, non-consistent, initial conditions

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