

ON THE HAHN PROPERTY OF BOUNDED DOMAINS OF SPECIAL MATRIX METHODS

MARIA ZELTSER

We discuss 3 properties of sequence spaces characterizing to which extent sequence spaces are determined by the sequences of 0's and 1's that they contain: the Hahn property, the separable Hahn property and the matrix Hahn property (cf. [1]). The Hahn property is stronger than the separable Hahn property and the latter one is stronger than the matrix Hahn property. One simple necessary condition for all Hahn properties is that beta dual of the set of sequences contained in a sequence space E coincides with the beta dual of E . Generally this assumption is not sufficient even for the matrix Hahn property. However if we ask additionally E to be a solid sequence space with beta dual equal to ℓ^1 , then E has the separable Hahn property (cf. [2], Theorem 6). We will see that generally even these additional assumptions do not imply that E has the Hahn property. However for some classes of sequence spaces E this implication hold, for example if E is the bounded domain of a regular Riesz or Hausdorff method.

In case of regular Riesz and Hausdorff matrices the bounded summability domain has the Hahn property if and only if the matrix has spreading rows. Relying on Boos-Leiger methods (cf. [3]) we will show that this condition implies also the Hahn property of the bounded summability domain in case of a generalized Riesz matrix obtained as a row submatrix of a Riesz matrix..

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DEPARTMENT OF MATHEMATICS, TALLINN UNIVERSITY, 10120 TALLINN, NARVA
MNT. 25, ESTONIA
E-mail address: mariaz@tlu.ee