PADÉ TYPE APPROXIMANTS and THE METHOD OF MULTIDIMENSIONAL GENERALIZED MOMENT REPRESENTATIONS

Hanna VESELOVSKA Institute of Mathematics NASU, Kyiv, Ukraine Institute of Mathematics, University of Lübeck, Germany anaweseka@gmail.com

The theory of multidimensional generalized moment representations has started a few years ago [2, 3], and generalized the concept proposed in [1].

Definition. The d-dimensional generalized moment representation of a number sequence $\{s_k\}_{k \in \mathbb{Z}^d_+}$ on product of some linear spaces $\mathcal{X} \times \mathcal{Y}$ is the following collection of equalities

$$s_{\mathbf{k}+\mathbf{j}} = \langle x_{\mathbf{k}}, y_{\mathbf{j}} \rangle, \quad \mathbf{k}, \mathbf{j} \in \mathbb{Z}_+^d$$

where $\{x_{\mathbf{k}}\}_{\mathbf{k}\in\mathbb{Z}_{+}^{d}}\subset\mathcal{X}, \{y_{\mathbf{j}}\}_{\mathbf{j}\in\mathbb{Z}_{+}^{d}}\subset\mathcal{Y}, \text{ where } \langle .,. \rangle \text{ is a bilinear form on } \mathcal{X}\times\mathcal{Y}.$

During the last few years the method of multidimensional generalized moment representations (MGMR) has been extended to new broad classes of functions of several variables.

The presentation will deal with the main idea of the MGMR and Padé type approximations, as well as give a review of the current state of research in this area.

Joint work with: Habil. Dr. Anatoly HOLUB, Institute of Mathematics NASU, Kyiv, Ukraine.

References

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