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Buhmann, Martin; Pinkus, Allan

On a recovery problem.

Ann. Numer. Math. 4, No. 1-4, 129-142 (1997).

Let f, $G : \mathbb{R}^n \to \mathbb{R}$ and $g : \mathbb{R} \to \mathbb{R}$ be functions, that such $f(\mathbf{x}) = \sum_{i=1}^m c_i G(\mathbf{x} - \mathbf{t}_i)$, $\mathbf{x} \in \mathbb{R}^n$, or $f(\mathbf{x}) = \sum_{i=1}^m c_i g(\mathbf{a}_i \cdot \mathbf{x} - b_i)$, for some $c_i, b_i \in \mathbb{R}$ and $\mathbf{a}_i, \mathbf{t}_i \in \mathbb{R}^n$, where $\mathbf{a}_i \cdot \mathbf{x}$ denotes the usual inner product on $\mathbb{R}^n$. The subject of this paper is the recovery of coefficients c_i, shifts b_i and $\mathbf{t}_i$, dilates $\mathbf{a}_i$ of prescribed functions G and g that generate a given function f. The authors provide a method that uniquely recovers the unknown quantities $\mathbf{a}_i$, b_i, c_i and $\mathbf{t}_i$. *S.Norvidas (Vilnius)*

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