

**GENERALIZATIONS OF SPECIAL BIHARI-TYPE INTEGRAL
INEQUALITIES IN MEASURE SPACES**

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ABSTRACT. Let (X, \mathcal{A}, μ) be a measure space, and let $S : X \rightarrow \mathcal{A}$. We study integral inequalities of the form

$$(0.1) \quad y(x) \leq f(x) + g(x) \int_{S(x)} y^\alpha d\mu, \quad x \in X,$$

where $\alpha > 1$, $y : D_y(\subset X) \rightarrow \mathbb{R}$ and $f, g : X \rightarrow \mathbb{R}$. Our main goal is to investigate whether and how one can give a function $b : D_b(\subset X) \rightarrow \mathbb{R}$ such that for every solution y of (0.1)

$$y(x) \leq b(x), \quad x \in D_y \cap D_b.$$

Further, we would like to choose the domain of b as large a subset of X as possible. The classical arguments can not be extended to this more general situation, we develop new methods. The results are applied to establish the existence of a solution to the corresponding integral equations.