

**A CONDITIONAL STABILITY THEOREM
IN THE PROBLEM OF DETERMINING
THE DISPERSION INDEX AND RELAXATION
FOR THE STATIONARY TRANSPORT EQUATION**

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We consider the problem of determining the relaxation $\sigma(x)$, $x \in \mathbb{R}^3$, and the dispersion index $K(x, \nu \cdot \nu')$ of the transport equation. As information for determining them, we specify emanating radiation on the boundary of a physical domain which is a function of a point on the boundary, the angular variables θ_0 and φ_0 defining the acute-directed radiation incident on the boundary, and the angular variables θ and φ defining the direction of emanating radiation. Assuming that the functions $\sigma(x)$ and $K(x, z)$ are small, we establish a stability estimate for a solution to this problem.

Key words and phrases: dispersion index, the transport equation, relaxation, inverse problems.

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