Review of “Stieltjes Functions and Spectral Analysis in the Physics of Sea Ice”

This is a highly mathematical article about the exploitation of Stieltjes functions for the analysis of the physical properties of sea ice as an example of generic composite media. The high level of mathematics makes it difficult to follow some of the arguments. I therefore suggest that verbal explanations be attached to some of the more esoteric mathematical developments. For example, when the function \( F(s) \) is first introduced in Eq. (5), a simple explanation should be given as to how this function is obtained, as is done in Bergman (1978). Similar explanations should be attached to Theorem 1 and Theorem 2.

Many publications are cited in an attempt to outline the history of the topic of the current article. However, some citations are missing:


In these articles the eigenstates of Maxwell’s equations are introduced for two-constituent and multi-constituent microstructures and used to calculate the local physical field.

In Line 94 Bergman (1982) should be cited.

In Lines 189 and 442, where elastic properties are mentioned, the following articles should be cited:


In these articles the Stieltjes method was first applied to elastic properties of microstructures.