

POSITIVE DEFINITE GENERALIZED FUNCTIONS AND THEIR REGULARITIES

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Abstract: The positive definiteness for functions and generalized functions of various kinds is considered in this lecture. As characterizations of positive definite generalized functions, several integral representation theorems are presented, which generalize Bochner theorem and Bochner-Schwartz type theorem. A focus is given to the regularities of positive generalized functions which include smoothness analyticity, ultradifferentiability, and such others. In addition, we introduce positive definiteness of temperatures, which are solutions of heat equations, and give a useful characterization for them.

References

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