

[Ajiev, Sergey](#)

**Algebraic operators, divided differences, functional calculus, Hermite interpolation and spline distributions.** (English) [Zbl 1236.47013](#)

Hassell, Andrew (ed.) et al., The AMSI-ANU workshop on spectral theory and harmonic analysis. Proceedings of the workshop, Canberra, Australia, July 13–17, 2009. Canberra: Australian National University, Centre for Mathematics and its Applications (ISBN 978-0-7315-5208-5). Proceedings of the Centre for Mathematics and its Applications, Australian National University 44, 63-95 (2010).

This article presents an algebraic and topological decomposition for algebraic operators and topological properties of their calculus. The author studies the continuity of divided differences with respect to the merging and non-merging convergences using only elementary methods of the calculus. In the third section, the author shows the correlations of Gel'fand's formula with the discrete Fourier transform and wavelet theory. Then, he provides a criterion for a closed operator to be bounded and algebraic. The author checks many standard properties of functional calculus and gives a representation of them.

For the entire collection see [\[Zbl 1218.47003\]](#).

Reviewer: [Ioana Tascu \(Baia Mare\)](#)

**MSC:**

- [47A60](#) Functional calculus for linear operators
- [65D05](#) Numerical interpolation
- [65D07](#) Numerical computation using splines
- [47A50](#) Equations and inequalities involving linear operators, with vector unknowns

**Keywords:**

[Hermite interpolation](#); [linear operators](#); [Jordan form](#); [Kaplansky's criterion](#)