



Ann. Funct. Anal. 4 (2013), no. 1, 175–284

ANNALS OF FUNCTIONAL ANALYSIS

ISSN: 2008-8752 (electronic)

URL: [www.emis.de/journals/AFA/](http://www.emis.de/journals/AFA/)

## GENERALIZED RESOLVENTS OF SYMMETRIC AND ISOMETRIC OPERATORS: THE SHTRAUS APPROACH

SERGEY M. ZAGORODNYUK

Communicated by L. Székelyhidi

ABSTRACT. This survey is devoted to the theory of Abram Vilgel'movich Shtraus and his disciples and followers. This theory studies the so-called generalized resolvents of symmetric and isometric operators in a Hilbert space and provides alternative formulas to the well-known Krein-type formulas.

SCHOOL OF MATHEMATICS AND INFORMATICS, KARAZIN KHARKIV NATIONAL UNIVERSITY, KHARKIV 61022, KHARKIV, UKRAINE.

*E-mail address:* [Sergey.M.Zagorodnyuk@univer.kharkov.ua](mailto:Sergey.M.Zagorodnyuk@univer.kharkov.ua)

---

*Date:* Received: 3 September 2012; Accepted: 12 November 2012.

*2010 Mathematics Subject Classification.* Primary 47-02; Secondary 47A20.

*Key words and phrases.* Extension, generalized resolvent, gap, isometric operator, symmetric operator.