

# Mathematical Institute

## of the University of Bonn

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## Young Women in Harmonic Analysis and PDE

December 2-4, 2016

### Jasmina Veta Buralieva (University Goce Delcev, Stip) Abelian results for the directional short-time Fourier transform

(joint work with K. Hadzi-Velkova Saneva and S. Atanasova)

We study the directional short-time Fourier transform (DSTFT) of Lizorkin distributions. DSTFT on the space  $L^1(\mathbb{R}^n)$  was introduced and investigated by Giv in [4]. Saneva and Atanasova extended this transform on the space of tempered distributions [5]. Here, we analyze the continuity of the DSTFT on the closed subspace of  $\mathcal{S}'(\mathbb{R}^n)$ , i.e. on the space  $\mathcal{S}'_{\{0\}}(\mathbb{R}^n)$  of highly time-frequency localized functions over  $\mathbb{R}^n$ . We also prove the continuity of the directional synthesis operator on the space  $\mathcal{S}'(\mathbb{Y}^{2n})$ . Using the obtained continuity results, we will define the DSTFT on space  $\mathcal{S}'_{\{0\}}(\mathbb{R}^n)$  of Lizorkin distributions, and prove an Abelian type result for this transform.

Keywords: (Directional short-time Fourier transform, distributions, quasiasymptotic behavior, Abelian theorems.)

References:

### News

**ERC Consolidator Grant for Dr. Evgeny Shinder**

**Jessica Fintzen wins Cole Prize**

**Vacancy: Office employee (Application deadline: 3.12.23)**

**Dr. Regula Krapf receives university teaching award**

**Open position: W3-Hausdorff Chair which corresponds to full professorship with tenure(Deadline: 31.10.2023)**

**Prof. Catharina Stroppel joined the North Rhine-Westphalia Academy for Sciences and Arts**

**Matthias Kreck elected corresponding member of the Göttingen Academy of Sciences and Humanities in Lower Saxony**

**M. Rapoport receives the Alexanderson Award of the AIM (joint with Jan Bruinier, Benjamin Howard, Stephen S. Kudla, and Tonghai Yang)**

**Prof. Daniel Huybrechts receives the Compositio Prize for the periode**

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- [9] S. Pilipović, B. Stanković and J. Vindas: *Asymptotic behavior of generalized functions*, World Scientific Publishing Co. Pte. Ltd., Hackensack, NJ, 2012.
- [10] K. Saneva, R. Aceska, S. Kostadinova: *Some Abelian and Tauberian results for the short-time Fourier transform*, Novi Sad Journal of Math., Vol. 43, No. 2, 2013, 81-89.
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**2017-2019**

**Prof. Catharina Stroppel receives Gottfried Wilhelm Leibniz Prize 2023**

**Rajula Srivastava receives Association for Women in Mathematics Dissertation Prize**

**Prof. Ana Caraiani wins a New Horizons in Mathematics Prizes 2023**

**Pius XI Medal awarded to Professor Peter Scholze**

**Prof. Valentin Blomer und Prof. Georg Oberdieck erhalten ERC grants**

**Grants for Mathematics students from Ukraine**

**Prof. Jessica Fintzen is awarded a Whitehead Prize of the London Mathematical Society**

**Prof. Peter Scholze elected as Foreign Member of the Royal Society**

**Bonner Mathematik belegt bei Shanghai Ranking den 1. Platz in Deutschland und weltweit den 13. Platz**

**Prof. Daniel Huybrechts erhält gemeinsam mit Debarre, Macri und Voisin ERC Synergy Grant**