ISOSPECTRAL DEFORMATIONS OF PARTIAL DIFFERENTIAL OPERATORS AND ALGEBRAIC VARIETIES

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It is well known that isospectral deformations of ordinary differential operators are described by the KP or KdV flows on Jacobians of algebraic curves.

For partial differential operators one can introduce a similar notion of isospectral deformations and then try to study the analysis and geometry connected with them. I will talk about equations describing these deformations (analogues of KP or KdV equations) and geometric properties of the corresponding geometric data (modified geometric data of Parshin) for some examples of differential operators in two variables.

This talk is based on recent works [1], [2].

References

[1] A. B. Zheglov, "On rings of commuting partial differential operators", e-print arXiv:math-ag/1106.0765v2

[2] H. Kurke, D. Osipov, A. Zheglov, "Commuting differential operators and higher-dimensional algebraic varieties", *Oberwolfach Preprint Series*, 2, 2012, http://www.mfo.de/scientific-programme/publications/owp

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