

# QUANTUM BESSEL PROCESSES AND BIRTH-DEATH PROCESSES ON PARTITIONS

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Quantum Bessel processes were considered in [1], [2] and [3]. They are classical Markov processes which are some (properly understood) radial parts of non-commutative Brownian Motion. They can also be viewed as certain transformations of some birth and death processes on partitions. The aim of the presentation is to introduce quantum Bessel processes and the associated birth-death processes along with their properties and interpretations.

## REFERENCES

- [1] Philippe Biane, *Quantum Markov processes and group representations*, Quantum probability communications, QP-PQ, X, World Sci. Publ., River Edge, NJ, 1998, pp. 53–72. MR 1689474 (2000k:81156)
- [2] Wojciech Matysiak, Marcin Świeca, *Zonal polynomials and a multidimensional quantum Bessel process*, Stochastic Processes and their Applications, Volume 125, Issue 9, September 2015, Pages 3430-3457, ISSN 0304-4149
- [3] Wojciech Matysiak, Marcin Świeca, *Jordan algebras and quantum Bessel processes*, International Mathematics Research Notices, 2016, 1-40