

# Quantization of Shape Spaces: Models of Background Independence

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## ABSTRACT

Quantization of shape spaces: models of background independence Abstract: In this interdisciplinary talk, I will point out some of the simpler families of shape spaces (configuration spaces of shapes) [1, 2]. I will then show how kinematical quantization [3] can be applied in giving quantum theories for these. This is an interesting model arena for background-independent quantization, involving highly symmetric spaces interpreted in an unusual way that is rather new within quantum theory. Such models of quantum shape were used e.g. in my book [4] so as to address the notorious Problem of Time between GR and GM.

## References

- [1] DG Kendall et al *Shape and Shape Theory* (Wiley 1999).
- [2] V Patrangenaru and L. Ellingson *Nonparametric Statistics on Manifolds* (CRC Press 2016)..
- [3] C.J. Isham, in *Relativity Groups and Topology*, ed BS De Witt et al 1984.
- [4] E. Anderson, *The Problem of Time. QM versus GR*, book manuscript Accepted by Springer.