**Higher Dimensional Representations of Qudits**

**Abstract**: In memory of Peter Weibel and Helmut Rauch, who supported the FWF/PEEK project *Quantum Cinema — a Digital Vision* (2010-2013) during which the 3D animated visualisation of 5- dimensional / 10-dimensional space was successfully completed (as shown below)

The previously presented representation of entangled quantum states by means of a Boolean intersection of the 3D representation of the Penrose Kites Darts tiling (E±) derived from Mermin’s Magic Pentagram (2017, published in 2022) will be elucidated in a more illustrative way by putting it into the context of Spin Network theory, Spin Foam models and Loop Quantum Gravity.

Based on this hyper-Euclidean quantum geometry, an attempt to visualize quantum bits in proportion (up to qudits in d=16 ) is presented in the same framework within higher dimensional space configurations embedded into the Poincaré dodecahedral space.