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Mechanisms from Motions –Rational and Algebraic by H.-P. Schröcker. 11:00-12:00

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The factorization of rational motions has been introduced about a decade ago. On a kinematics level it corresponds to the decomposition of a rational motion into elementary motions (rotations, translations, ...) The mathematics behind is the factorization of special polynomials over non-commutative rings into linear factors. This talk gives an overview about the past decade of motion factorization and explains many of the underlying constructions of mechanisms at hand of animations. It will also feature a new geometric factorization algorithm that highlights the importance of “kinematics at infinity” and gives rise to an extension of the factorization theory from rational to algebraic motions.