Analysis of curves with Lie groups

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Investigating curves and surfaces are forming very important part of differential geometry since the 18th century. Besides this, at the late 19th century, differentiable manifolds have arisen. And the Lie groups are important structures because of being a bridge from algebraic properties to geometric properties of manifolds. In this study, we analyse the some special curves which are given by a new adjoint approach based on differential geometry by Wang ([1]). While analysing these curves we used the Lie groups and relations between Lie groups which are given by Karger ([2]).

REFERENCES

[1] D. L. Wang, J. Liu, D. Z. Xiao, *Kinematic differential geometry of a rigid body in spatial motion-I. A new adjoint approach and instantaneous properties of a point trajectory in spatial kinematics*, Mech. and Mach. Theory, Vol 32, No 4 (1997) pp. 419-432.
[2] A. Karger, J. Novak, *Space Kinematics and Lie Groups*, Gordon and Breach Science Publishers, Switzerland, 1985.