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In differential geometry of curves and surfaces, we think of ruled surface as a special and interested topic in research, that represent the moving of a line around a curve. In this work, we study the ruled surface which is defined by Darboux frame of its base curve relatively to an arbitrary regular surface in euclidean 3-space, we give the relation between Darboux frames of the two surfaces common's cuve and investigate the main metric properties of the ruled surface such as the Gaussian and the mean curvatures, consequently, we establish some characterizations in some special cases, we give also some examples with illustrations.

References

- [1] A. T. Ali, H. S. Abdel Aziz, A. H. Sorour, Ruled surfaces generated by some special curves in Euclidean 3-Space. J Egyptian Math Soc 21, 285–294, 2013
- [2] P. do-carmo, Differential Geometry Of Curves and Surfaces, IMPA, 511, 1976
- [3] M. A. Soliman, H. N. Abd-Ellah, S. A. Hassan and S. Q. Saleh, Darboux Ruled Surfaces with Pointwise 1-Type Gauss Map. Sohag J Sci, 1-8, 2017
- [4] Y. Unluturk, M. Cimdiker, C. Ekici, Characteristic properties of the parallel ruled surfaces with Darboux frame in Euclidean 3- space. CMMA 1, No. 1, 26-43, 2016
- [5] M. Önder, Slant Ruled Surfaces in the Euclidean 3-space E^3 . <https://arxiv.org/abs/1311.0627>, 2013
- [6] S. Izumiya, N. Takeuchi. New special curves and developable surfaces. Turk J Math. 28, 153-163, 2004
- [7] S. Kiziltuğ, A. Çakmak. Developable Ruled Surfaces with Darboux Frame in Minkowski 3-Space. Life Science Journal, 10(4), 2013
- [8] M. Onder, O. Kaya. Characterizations of Slant Ruled Surfaces in the Euclidean 3-space E^3 . <https://arxiv.org/abs/1311.6928>, 2013,