

# Special form of geodesics and almost geodesics curves

Belova Olga

I determine in the  $n$ -dimensional real space the form of curves  $C$  for which also any image under an  $(n - 1)$ -dimensional algebraic torus is a geodesic or an almost geodesic with respect to an affine connections with constant coefficients and calculate explicitly the components of the connections.

The geodesics and almost geodesics play an important role in differential geometry the explicit calculation of the form of curves  $C$  which are geodesics or almost geodesics with respect to an affine connection is not achievable even in the case if the components of the connection are constant. But we can do it if we moreover suppose that with  $C$  also all images of  $C$  under a real  $(n - 1)$ -dimensional algebraic torus are also geodesics, respectively almost geodesics. This implies that the determination of  $C$  becomes an algebraic problem. I considered a curve  $C$  homeomorphic to  $R$  which is a closed subset of  $n$ -dimensional real space and has the special form.