Non-associative Moufang loops of point classes on cubic surfaces

Abstract:

In this talk, I will construct an example of a non-associative Moufang loop of point classes on a cubic surface over a local field and describe a class of cubic surfaces over number fields for which I conjecture that Moufang loops associated with them are non-associative. The question about the existence of non-associative loops of point classes on cubic surfaces was stated in Yuri I. Manin’s book “Cubic Forms” about fifty years ago. All required concepts will be recalled.