1135-00-3190 **B I Mahler***, Hertford College, Catte Street, Oxford, OX1 3BW, United Kingdom. *Flooding filtration on directed networks.*

We describe the notion of energy landscape and critical nodes of a complex network as developed by Weinan E. et al. We explain how persistent homology can be used to find critical nodes. We note that these methods in their original form are only suitable to be used on undirected unweighted networks and explore ways to generalise them to be applicable in the setting of directed weighted networks. (Received September 27, 2017)