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**Genki Kusano\*** ([genksn@gmail.com](mailto:genksn@gmail.com)), 6-3, Aoba, Aramaki, Aoba-ku, Sendai, Miyagi 980-8578, Japan, and **Kenji Fukumizu** and **Yasuaki Hiraoka**. *Kernel method for persistence diagrams*.

Topological data analysis (TDA) is an emerging mathematical concept for characterizing shapes in complex data. In TDA, persistence diagrams are widely recognized as a useful descriptor of data, and can distinguish robust and noisy topological properties. In this talk, we will propose a kernel method on persistence diagrams to develop a statistical framework in TDA. The proposed kernel satisfies the stability property and provides explicit control on the effect of persistence by a weight function. Furthermore, the method allows a fast approximation technique. The method is applied into practical data and the results show the advantage of our method compared to other relevant methods on persistence diagrams. (Received September 02, 2016)