

1106-05-1995      **Peter Diao\*** (peter.z.diao@gmail.com), **Dominique Guillot**, **Apoorva Khare** and **Bala Rajaratnam**. *Differential Calculus on Graphon Space*.

The beautiful theory of dense graph limits has received attention from many different viewpoints. In this talk, I will describe recent work on the structure of smooth graphon parameters. The talk will be structured into three main parts.

1. A brief general introduction to the key topological properties of graphons.
2. A description of a theorem that summarizes the general structure of the derivatives of smooth graphon parameters.
3. An exposition of the main ideas of the proof, applications to homomorphism density expansions of smooth graphon parameters, and generalizations.

(Joint with D. Guillot, A. Khare, and B. Rajaratnam) (Received September 15, 2014)