

## ***Applications of nonstandard analysis to graphon theory***

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**Zoom meeting ID: 848 2984 5339 Password: 061801**

**Link: <https://zoom.us/j/84829845339>**

### **Abstract:**

In 2006, Lovász and Szegedy introduced the notion of graphon. A graphon could be considered as a limit of a sequence of finite graphs. However, a graphon is not a graph but a symmetric measurable function from  $[0,1]^2$  to  $[0,1]$ . In this talk, we use methods from nonstandard analysis to present a new construction of graphons. Take a hyperfinite set  $H$ . An internal graph on  $H$  is a graph whose edge set is an internal subset of  $H \times H$ . We will build a correspondence between hyperfinite internal graphs and graphons. Graphons are not graphs, but internal graphs on  $H$  are indeed graphs.