**Department of Mathematics** 

University of Houston

## **Analysis Seminar**

## FRIDAY, September 14, 2018

13:00-14:00 - Room 646 PGH

Speaker: Michal Wojciechowski (Institute of Mathematics of Polish Academy of Sciences)

**Title:** On yet another analogon of Riesz brothers theorem for Sobolev space

**Abstract:** We show that the quotient space  $BV/W^{1,1}$  is isomorphic to the space of bounded Borel measures. Here BV denotes the space of functions of bounded variation and  $W^{1,1}$  the Sobolev space of functions with integrable gradient on regular domain. One can see this as an analogon of Pełczyński's result that dual to the space of  $C^1$ -smooth functions is a separable perturbation of the space of measures. Main ingredients of a proof are G. Alberti rank one theorem and extension/averaging results for Sobolev and BV spaces.