Walter A. Ortiz
Universitat Autònoma de Barcelona
A note on rearrangement Poincaré inequalities and the doubling condition
Abstract: We introduce Poincaré type inequalities based on rearrangement invariant spaces in the setting of metric measure spaces and analyze when they imply the doubling condition on the underline measure. This work is join Joaquim Martín from Universitat Autónoma de Barcelona (Spain).

Alejandro Santacruz Hidalgo
University of Western Ontario
Monotonicity in Kernel operators and abstract Hardy inequalities
Abstract: We consider operators of the form $f(x) \mapsto \int_U k(x,y)f(y)d\mu(y)$ where (U,μ) is a σ-finite measure space and the kernel nonnegative kernel $k(x,y)$ satisfies a monotonicity condition of its level sets. Examples of these types of operators include Cesaro operators, Hardy averaging operators, and Abstract Hardy operators. We will see that these operators induce a totally ordered subset of the σ-algebra called an ordered core, this will allow us to introduce a definition of monotone functions compatible with the ordered core. We extend the greatest core decreasing minorant, previously only available for functions over the real line, to this new setting. This will allow us to transfer the monotonicity condition from the kernel in certain weighted norm inequalities. As an application of the customization and flexibility provided by this novel definition of monotone functions, we will show new results for Hardy inequalities in metric measure spaces, as well as a new characterization of the boundedness for the Abstract Hardy operator from $L^1 \to L^q$. This talk is based on joint work with Gord Sinnamon.

Harpal Singh[4]
UiT The Arctic University of Norway
A hybrid system for monitoring of remote civil engineering infrastructure
Abstract: Extreme Arctic conditions have adverse effect on the civil engineering infrastructure. Moreover, due to global warming earth is undergoing through a rapid climate change. As a result, storms are getting bigger and the waves in the ocean are becoming more violent. Such severe storms under extreme arctic environment could lead to further degradation of the infrastructure. It requires a lot of logistics to carry out a planned inspection activity of a structure in remote area in arctic regions. Reduced performance of structure or its failure can cause prolonged downtime that could have severe economic effects in a region. Structural health monitoring (SHM) is a technique used for monitoring the health of infrastructure. In this talk I present a new hybrid system based on drones, machine learning and artificial intelligence for SHM of remote civil engineering infrastructure to enhance safety and reduce structures downtime. Moreover, the

[4]The talk rescheduled.