

Pacific Institute *for the*
Mathematical Sciences

PIMS/Shell Lunchbox Lecture

26 February, 2015
12:00 pm

Calgary Place Tower 1 , Room 1106
330 5th Avenue SW, Calgary



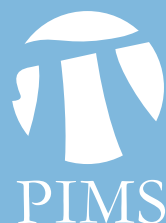
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Compressed Sensing: Theory, Applications and Extensions

Many problems in science and engineering require the reconstruction of an object - an image or signal, for example - from a collection of measurements. Due to time, cost or other constraints, one is often severely limited by the amount of data that can be collected. Compressed sensing is a mathematical theory and set of techniques that aim to improve reconstruction quality from a given data set by leveraging the underlying structure of the unknown object; specifically, its sparsity.

In this talk I will commence with an overview of the fundamentals of compressed sensing and discuss some of its applications. However, I will next explain that, despite the large and growing body of literature on compressed sensing, many of these applications do not fit into the standard framework. I will then describe a more general framework for compressed sensing which aims to bridge this gap. Finally, I will show that this new framework is not just useful in explaining existing applications of compressed sensing. The new insight it brings leads to substantially better compressed sensing-based approaches than the current state-of-the-art in a number of applications.

REGISTRATION: <http://www.pims.math.ca/industrial-event/150226-pllcstae>



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