





# Meetings of the Belgian Quantum Physics Initiative Colloquium



Ronald de Wolf CWI and University of Amsterdam Netherlands

## **Quantum machine learning**

Both machine learning and quantum computing have received much attention in recent years. Quantum machine learning combines these two topics, using quantum computers to improve the performance of learning tasks. I will give an introduction and survey of this new area, starting with some interesting ways in which quantum techniques can speed up some specific learning problems (such as clustering and principal component analysis), and then moving on to more general results about the power and limitations of quantum machine learning.

## Thursday 7 DECEMBER 2017 AT 4.00 P.M.

#### COFFEE AND TEA WILL BE SERVED AT 3.00 P.M.

Two short talks will also be given:

### 2pm: Samuel Lellouch (ULB / Lille Univ.)

«Parametric instabilities in shaken atomic gases»

### 2:30pm: Antoine Neven (ULg)

« The quantum separability problem is a simultaneous hollowisation matrix analysis problem»

#### **PRIGOGINE ROOM**

Académie Royale de Belgique Rue Ducale 1, 1000 Bruxelles - Belgique