

**Minicourse on Machine Learning for Many-Body Physics
(September 25-29, 2017)**

	09/25/2017	09/26/2017	09/27/2017	09/28/2017	09/29/2017
	Monday	Tuesday	Wednesday	Thursday	Friday
	Statistical mechanics, Monte Carlo	General introduction to Machine Learning	Supervised and Unsupervised Learning	Restricted Boltzmann Machines (RBMs)	Research Frontiers
08:30 - 09:30	Registration				
9:30 - 11:00	L1: Ising model, Gauge theories	L1: Linear Fitting, Regression, Supervised learning	L1: Convolutional Neural Networks (CNNs)	L1: RBMs for classical systems	L1: Quantum State Tomography
11:00 - 11:30	coffee break	coffee break	coffee break	coffee break	coffee break
11:30 - 13:00	L2: Monte Carlo simulations	L2: Supervised Learning for Ising systems and Backpropagation	L2: Introduction to Unsupervised Learning, PCA	L2: RBMs for quantum systems	L2: Quantum Machine Learning
13:00 - 14:30	Lunch	Lunch	Lunch	Lunch	Lunch
14:30 - 16:30	LAB: Monte Carlo in Python	LAB: Feedforward Neural Network	IFT-Colloquium (at 2 pm)	LAB: An RBM for the Ising model	LAB: Quantum tomography of the W state
16:30 - 17:00	coffee break	coffee break	coffee break (at 3:15 pm)	coffee break	coffee break
17:00 - 19:00	LAB: Monte Carlo in Python	LAB: Feedforward Neural Network	LAB: CNN for Ising gauge theory (at 3:30 pm)	LAB: An RBM for the Ising model	LAB: Quantum tomography of the W state

More information: <http://www.ictp-saifr.org/ML2017>