

International Workshop on Machine Learning and Quantum Computing Applications in Medicine and Physics



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In the era of astronomical “big data”, with the amount of observational data ever-increasing and about to increase by orders of magnitudes during the next decade, machine learning has become not only a commodity but also a necessity. At the same time, the application of machine learning methods to astrophysical problems yields many specific challenges. One of them is related to the fact that while the data to which we want to apply these methods are often big, the available training samples are small. Moreover, they are often not really representative, in a way that may be difficult to quantify, which faces us with a variety of extrapolation problems. More challenges are related to the interpretability of the results, given the limited information we can access. I will try to discuss the aims, difficulties and attempts to overcome them, making use, among other things, of examples from the research made in our extragalactic astrophysics group in NCBJ and UJ.

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