# "Searches for sterile neutrino below the electroweak scale”

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Abstract :

Right-handed (also known as sterile) neutrinos are the most natural way to give a Dirac mass to Standard Model neutrinos via the Higgs mechanism. It is well known that if sterile neutrinos have a relatively large Majorana mass term this leads to the seesaw mechanism and can explain the smallness of active neutrino masses.

It has been shown that sterile neutrinos with Majorana masses below the electroweak scale can possibly explain as well the baryon-antibaryon asymmetry in the Universe via leptogenesis. In addition, if the lightest if these sterile neutrinos is very weakly coupled, with a lifetimes much longer than the age of the Universe, it is an excellent candidate for warm Dark Matter.

I will described current searches for sterile neutrinos below the electroweak scale and opportunities at future facility. In particular, I will concentrate on the SHiP experiment, which is a proposed new beam-dump experiment at the SPS of CERN.