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Linear and Non-linear AC Magnetic Susceptibility for the Study of Superconducting and Magnetic Materials

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Message from the Guest Editors

The AC magnetic susceptibility (ACMS) technique is a powerful tool which makes it possible to investigate the magnetic response of a material when an AC magnetic field is applied. By changing the AC field amplitude and frequency, it is possible to probe the different magnetic behaviors and obtain information about the characteristic magnetic properties of the material. In particular, the study of superconductors by means of the ACMS technique enables researchers to determine the shielding and dissipation properties of the investigated sample by analyzing the real and imaginary part of the AC fundamental harmonic, respectively, together with other important features for applications such as critical temperature, critical current density in the AC regime, pinning properties, etc. Moreover, by analyzing the first- and third-harmonic components it is possible to study the vortex dynamics of the sample, distinguishing different dissipative regimes. [...]

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Prof. Massimiliano Polichetti
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Guest Editors

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Message from the Editor-in-Chief

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