



## **On leaf magnetic homogeneity in particulate matter biomonitoring studies**

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Magnetic properties of tree leaves has been postulated as a good approach to biomonitor particulate matter (PM) pollution in urban areas. We have studied the variation of magnetic hysteresis parameters on leaves from *Quercus ilex*, an evergreen oak previously used for magnetic biomonitoring of air pollution in Rome (Italy). Hysteresis parameters (MRS, MS, BCR and BC) have been measured on sub-specimens collected at a close spacing on the surface of two single leaves in order to examine the variation which can occur on a single leaf. The normalized hysteresis cycles are remarkably similar for all the specimens. Normalization of magnetic moment by mass appears however more efficient than normalization by volume. The variance of the different magnetic parameters was significantly smaller than those observed on a collection of *Q. ilex* leaves sampled from several trees distributed along high-traffic roads. Variability is higher for magnetizations than for coercivities, which suggests a uniform source for the magnetic particles. It also indicates a limited variation in their concentration for individual leaves.