



To the multivectorial paleointensity determination by Thellier method

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In the practice of paleomagnetism the NRM vector often consists of two (or more) vectors of different nature and age. If both primary and secondary components of NRM are of thermoremanence nature, one can usually subdivide total NRM into a sum of low- and high-temperature components. The straightforward application of Thellier method to this case may yield a nonlinear low-temperature segment on the corresponding Arai-Nagata plot as was pointed out by Yu and Dunlop, 2002. The general method of analyzing such diagrams is developed. As shown, even for the ideal case of SD grains the low-temperature segment is of the parabolic shape. In particular, in the case when the low- and high-temperature vectors of total NRM make an obtuse angle, the parabola has a minimum at some temperature inside the low-temperature segment. A set of experiments to simulate the acquisition of two-component TRM at different angles between the components was carried out on an artificial thermo-stabilized sample. The results are in a good agreement with the calculations. An attempt to apply the method to two fresh natural samples, revealing a minimum in low-temperature parts of their Arai-Nagata diagrams, was done bringing promising results. The work is supported by INTAS 03-51-5807.