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Comparison of the influence of a strong current and of a spark on the distribution of the resistance of a contact between two grains¹ STEPHANE DORBOLO, University of Liege, ALEXANDRE MERLEN, University of Toulon, ERIC FALCON, Laboratoir MSC, Paris VII, MATTHIEU CREYSSELS, University of Rennes, BERNARD CASTAING, ENS Lyon, NICOLAS VANDE-WALLE, University of Liege — The distribution of the electrical resistance of a contact between two stainless steel beads is a log normal. When a current is injected through a contact, the voltage is not univocally determined. The system exhibits hysteresis. A chain of beads have been used to make some statistic and to determine how a strong current or a electric spark modify the distribution of the resistance. A strong current changes the distribution of resistance into a nearly gaussian distribution. The contacts are soldered by the current. On the other hand, a spark only modifies the highest resistances. The value of the minimum resistance that is modified is determined by the distance between the spark and the bead chains.

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