

## **A super volcano in southern Brazil**

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A new relationship between the geological process in a normal volcanic eruption is proposed here to explain the super volcano of the locality named Caolin Paraná. The geological history of this area is produced by a normal evolution of a thick succession of debris flow deposits of a remote and unknown volcano, the diagenetic and possible hydrothermal transformation, with the massive elimination of the matrix phase (ash) and concentration of roundly and little (with mean diameter of 20 cm) fragments of 32 different rock species, subdivided in numerous rock facies. One important cementation phase, essentially of iron oxide nature, make the whole debris flow a consolidated and resistant material, sufficiently to obstruct and interrupt a evolution of the normal volcano, may be for years or decades. This work, with many examples, actually showed as fragments with 20 or 25 thousands tones, to 10 or 20 tones (away the volcanic centre), try to establish the extension of the volcanic eruption itself (with an originally destruction of the primary volcanic structure, with no remains now), and the environmental catastrophe that influences the earth atmosphere, possibly in a planetary scale, in the Early Phanerozoic Eon. The geodynamic model of known volcanic eruptions needs, in this context, be completely revised and seems sure that new processes need imperatively to be proposed, as answers of some questions: 1) What is the height of the volcanic column in a super eruption? 2) The energy balance exclude the pyroclastic rocks of this kind of eruption? 3) What is the area of influence (with defined ash isopac) of a super eruption? 4) What are the transport mechanisms (aerial or on/over the ground) of the giant fragments? 5) The other known examples of the same evolution, in the area, may have counterparts in other regions of the world? This seems just the beginning of a new era of study on particular kinds of volcanic evolution.