PŘEDNÁŠKA/ LECTURE

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On Bolzano and Greek concepts of continuity

In the ancient Greek philosophy and mathematics, continuity referred to lines, figures and solids, and time, place and motion. All these objects were considered continuous in one and the same sense: there were divisible into parts that were infinitely divisible. In 1817's Rein analytischer Beweis, Bolzano introduced two brand new ideas: εδ concept of continuous function and continuity of a total order in terms of the least upper bound principle. The first was related to motion, the second to a straight line. In the talk, we present mathematical motives that lead Bolzano to these ideas. To this end, we discuss Aristotle's definitions and examples of continuity, Euclid's concept of magnitude, and Pappus' account of mechanical curves; we show how the idea of punctiform curve emerged in Descartes' La Géométrie. Then we provide a detailed analysis of Rein analytischer Beweis.

Wednesday, 28/06/2023 | 14.00 CET

Meeting room („zasedačka"), Institute of Philosophy CAS, Jilská 1, Prague 1