

# On Banach's fixed point theorem and formal balls

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## **Abstract**

We present an alternative order-theoretic proof of the Banach fixed point theorem for selfmaps on complete metric spaces which is based on formal balls and, contrarily to the case of Edalat and Heckmann [Theoret. Comput. Sci. 193 (1998), 53-73], does not derive from the well-known dcpo fixed point theorem.

*Keywords:* metric space, ordered set, dcpo, formal ball, computational model.