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Section:

8. Analysis

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Parameter continuation method and solvability of nonlinear equations
Nonlinear operators which map a weak metric space into a Banach space are considered. It is shown that a nonlinear operator close to an invertible nonlinear operator is invertible. Analogous result for an operator distant from invertible operator is proved by parameter continuation method. The relation to to the theory of monotone operators theory is established. Some properties of the resolvent sets and resolvent operators are discussed.
References: V. A. Trenogin: [1] Global invertibility of nonlinear operators and parameter continuation method, Dokl. Ac. Scie. **350(4)**, (1996), 455–457, [2] Locally invertible operators and parameter continuation method, Funct. Anal. and Appl. **30(2)**, (1996), 147–148.