

## **Kantorovich's theorem on Newton's method for solving strongly regular generalized equation.**

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### **Resumo/Abstract:**

We consider Newton's method for solving a generalized equation in Banach spaces. We show that, under strong regularity of the equation and on condition that the starting point satisfies Kantorovich's assumptions, the method is quadratically convergent to a solution, which is unique within a suitable neighborhood of the starting point. Our analysis, which is based on Kantorovich's majorant technique, enables us to obtain a convergence result under Lipschitz, Smale's, and Nesterov-Nemirovskii's self-concordant conditions.