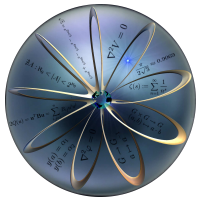

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Neumann series in Banach algebras

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The Neumann series can be generalized to a Banach algebra $\mathcal{A}$ with identity element e. Thus we have:

If $x \in \mathcal{A}$ is such that $\|x\| < 1$ then $e - x$ is invertible with inverse given by

$$(e - x)^{-1} = \sum_{n=0}^{\infty} x^n$$

and

$$\|(e - x)^{-1}\| \leq \frac{1}{1 - \|x\|}$$