

Grassmann Number notes

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Abstract

From Supermanifolds [DeW92].

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1 Inverse of a Supernumber

Let $z = z_B + z_S$ be a supernumber with z_B its body, z_S its soul. If $z_B \neq 0$, then it has an inverse. The inverse can be found via the following formal series:

$$\frac{1}{a + z} = \frac{1}{a} \frac{1}{1 + \frac{z}{a}} = \frac{1}{a} \sum_{n=0}^{\infty} \left(-\frac{z}{a}\right)^n \quad (1.0.1)$$

Thus,

$$z^{-1} = z_B^{-1} \sum_{n=0}^{\infty} (-z_B^{-1} z_S)^n \quad (1.0.2)$$

References

[DeW92] Bryce S. (Bryce Seligman) DeWitt. *Supermanifolds*. Cambridge University Press, 1992. URL: <http://www.cambridge.org/us/academic/subjects/physics/theoretical-physics-and-mathematical-physics/supermanifolds-2nd-edition?format=PB&isbn=9780521423779>.

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