

地球磁层的磁场模型

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摘要 1958年卫星探测发现了磁层, 至今已有半个世纪, 对磁层电场、电流体系、磁场、粒子分布和等离子体波的探测研究构成了空间物理的重要内容, 其结果是各种磁层模型的出现. 本文简要综述磁层建模的基本原理、方法和发展历史, 对十几种重要的磁层模型的特点、局限性和适用范围进行了对比分析, 以Tyganenko模型为例, 讨论了磁层模型发展的趋势.

关键词 [太阳风](#), [磁层](#), [磁场模型](#), [地球电磁环境](#)

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Magnetic field models of the Earth's magnetosphere

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Abstract A half of a century has passed since the Earth's magnetosphere was discovered by satellite Explores in 1958. Studies on space physics cover a wide range of topics: electromagnetic fields, electric currents, particles, plasma waves et cetera. Various models have appeared for describing our electromagnetic environment. This paper reviews the progresses of magnetosphere modeling, their basic principle and methodology. More than one dozen of magnetospheric models are discussed and compared on their characteristics, limitations and validity.

Key words [solar wind](#), [magnetosphere](#), [magnetic field models](#), [electromagnetic environment of the Earth](#)

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