

真空室内凹对电磁分离器离子光学特性的影响

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摘要 大型同位素电磁分离器真空室在大气压力作用下会出现严重的内凹现象。本文利用数值模拟方法,分析了内凹对磁场分布和离子束聚焦特性的影响,指出了一条消除内凹影响的有效途径。

关键词 [离子光学](#) [数值模拟](#) [同位素电磁分离器](#) [真空室内凹](#)

分类号

EFFECT OF VACUUM CHAMBER INWARD-CONCAVITY ON ION OPTICAL CHARACTERISTICS OF ELECTROMAGNETIC ISOTOPE SEPARATORS

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Abstract The vacuum chambers of large-scale electromagnetic isotope separators (Calu-trons) are affected by serious inward-concavity under the atmospheric pressure. The numerical simulation method is used to analyse the effect of inward-concavity on the magnetic field distribution and ion beam focusing characteristics. It is pointed out that strengthening the magnetic induction and adjusting the position of receiver adequately for a constructed apparatus can eliminate the effect of inward-concavity on the image widths of beams. This idea is verified through adjustment of an electromagnetic isotope separator.

Key words [Ion optics](#) [Numerical simulation](#) [Electromagnetic isotope separator](#) [Vacuum chamber inward-concavity](#)

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