

## DS-CDMA系统中迭代多用户检测技术的研究

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**摘要** 为了减小多址干扰(MAI)对CDMA(Code-Division Multiple-Access)系统性能的影响,把TURBO码译码和多用户检测器有机结合起来,提出了迭代多用户检测技术. TURBO码译码器根据多用户检测器生成的软信息计算后验概率,在下次迭代过程中这个编码比特的后验概率被用作先验信息反馈给多用户检测器,一般完成3次以上迭代后,进行硬判决输出结果. 仿真结果表明,迭代多用户检测技术使系统性能能得到很大提高,与单用户的性能相差不到1dB.

**关键词** [迭代译码](#) [TURBO码](#) [CDMA](#) [多用户检测](#)

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## Study of iterative multi-user detection technology in the DS-CDMA system

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### Abstract

For the purpose of cutting down the influence of multi-access interference on the performance of a CDMA(Code-Division Multiple-Access) system, we combine a turbo decoder with a multi-user detector organically and present the iterative multi-user detection technology. The turbo decoder is taken as the input soft-in information generated by multi-user detection, and produces a posteriori probabilities, which is used as a priori probabilities by multi-user detection. After a certain number(usually more than 3)of iterations the decoder makes a hard decision and outputs the result. The simulation result presented shows that iterative Multi-user Detection Technology enables the system to improve in performance greatly, which is near (less than 1dB) single user performance. <BR><FONT face=Verdana><BR></FONT>

**Key words** [iterative decoding](#) [Turbo codes](#) [CDMA](#) [multi-user detection](#)

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