平方根倒数速算法的精度优化

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摘　要：平方根倒数速算法是计算机数值计算中的一种常用方法.文中在对平方根倒数速算法的原理进行分析的基础上，提出一个新的算法常数来提升计算结果的统计精度.实验结果表明，本文提供的算法常数相比于原有的算法常数能将批量数据处理的平均精度提升大约30%~40%，而针对单个数据的计算，本文方法的意义在于能从一个更大的概率(平均约 77%)上获得比原有方法更加精确的结果.

关键词：平方根倒数；0x5f3759df；0x5f34ff59；卡马克常数；精度优化

Accuracy optimizing for fast inverse square root algorithm

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Abstract：The fast inverse square root algorithm is a common method in computer numerical calculation. Based on the principle analysis of the fast inverse square root algorithm，　a new algorithm constant is proposed to improve the statistical accuracy of the calculation results. The experimental results show that the algorithm constant provided by this paper can increase the average precision of batch data processing by about 30%~40% compared with the original algorithm constant. For the calculation of single data，　the significance of the method in this paper is to obtain a more accurate result than the original method on a larger probability (average of about 77%).

Key words：inverse square root; 0x5f3759df; 0x5f34ff59; carmack constant; accuracy optimizing