1072-68-155 **Chi Sing Chum** and **Xiaowen Zhang*** (xiaowen.zhang@csi.cuny.edu), 2800 Victory Blvd, 1N-215, Staten Island, NY 10314. *Improving Latin square based secret sharing schemes.*

Because there exists a huge number of different Latin squares for a relatively large order greater than or equal 10, Latin square has been used to represent a secret in secret sharing schemes since 90s. However the schemes based on Latin squares proposed in the literature are subject to various limitations. Using critical sets for implementation improves the efficiency and flexibility, but the difficulties on finding critical sets make such implementation impractical. In order to overcome these limitations, we propose to apply cryptographic hash functions and herding hashes technique into Latin square based schemes. Our schemes can realize any access structure. They are perfect, ideal, efficient, and flexible. They can be easily set up as proactive or verifiable if required. We also outline a proposal for the implementation. (Received June 26, 2011)