

SCMS Seminar



GLOBAL MM ALGORITHMS FOR NONPARAMETRIC/SEMIPARAMETRIC QUANTILE REGRESSION MODELS

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Time: 10:00-11:00 am., Wednesday, April 30

Venue: Room 2201, East Main Guanghua Tower, Handan Campus

Abstract: Nonparametric and semiparametric quantile models are widely used statistical models in many research fields and applications. However, their estimation procedures relate to a set of locally weighted quantile functions, and the optimization is very challenging. In this talk, we investigate a class of new MM Algorithms, termed the global MM algorithm, for a variety of nonparametric and semiparametric quantile models. By introducing a global residual, the proposed algorithms simultaneously minimize a set of locally weighted quantile loss functions, and yield more smoothed estimate of the quantile function in practice. We further show that the proposed algorithm preserves the monotone descent property in an asymptotic sense. We give some applications in several popular nonparametric and semiparametric quantile models. Finally we discuss the motivation of the new MM algorithm and its relation to the modified EM algorithm for nonparametric mixture of regression models.