Invariance principles for linear processes

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In this talk, I shall give some results concerning the functional limit theorems for linear processes generated by dependent innovations. Due to the general weights these processes can exhibit long range dependence and the limiting distribution is Fractional Brownian Motion. The proofs are based on new approximations with a linear process generated by martingale differences innovations, and on maximal inequalities. The results are then applied to study an estimator of the isotonic regression. (This is a joint work with J. Dedecker and M. Peligrad).