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Parameter Estimation for Processes with Heavy Tails and Long-Range Dependence  

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ABSTRACT  

We consider parameter estimation for stationary processes that exhibit both long-range dependence and heavy tails. Processes with such features exist widely in network traffic, geology, telecommunication, finance and other areas. The long-range dependence parameter and the heavy tail index play a fundamental role in understanding such processes. Consistency of our estimators of both parameters is established under mild conditions. Our approach is illustrated by a simulation study and is applied to a real internet traffic data collected from an email server.