



Nonlinear Analysis of EKG Data



**Presented to
Dr. Bob Spencer, M.D.
UTK Medical Center
by
Lee Hively, Ph.D.
ORNL Nonlinear Analysis Team**

October 27, 1999



Topics

oml

- Methodology
- Typical EEG results
- Typical EKG results
- Potential for collaboration of fibrillation warning

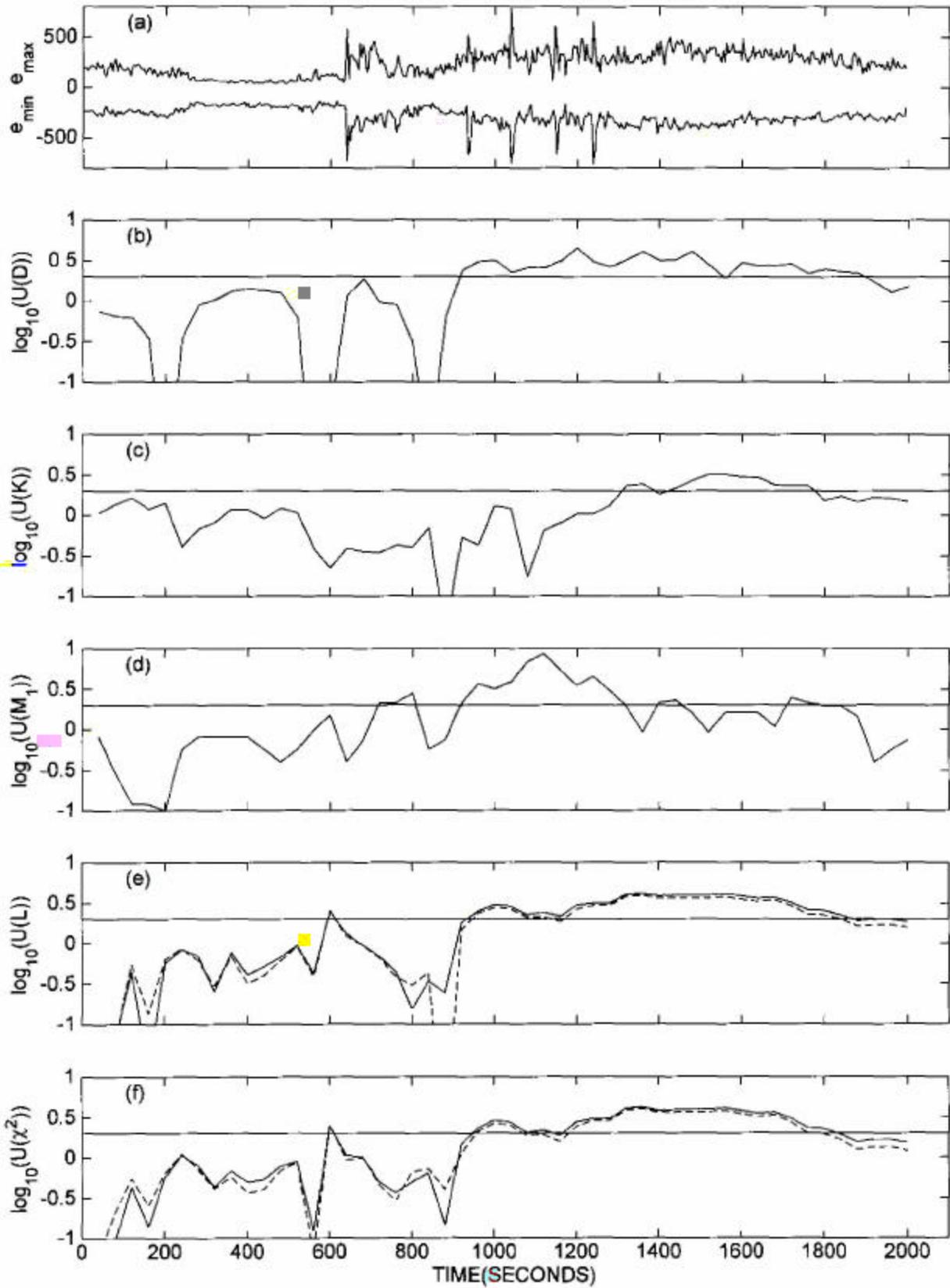


Nonlinear Analysis of EKG Data

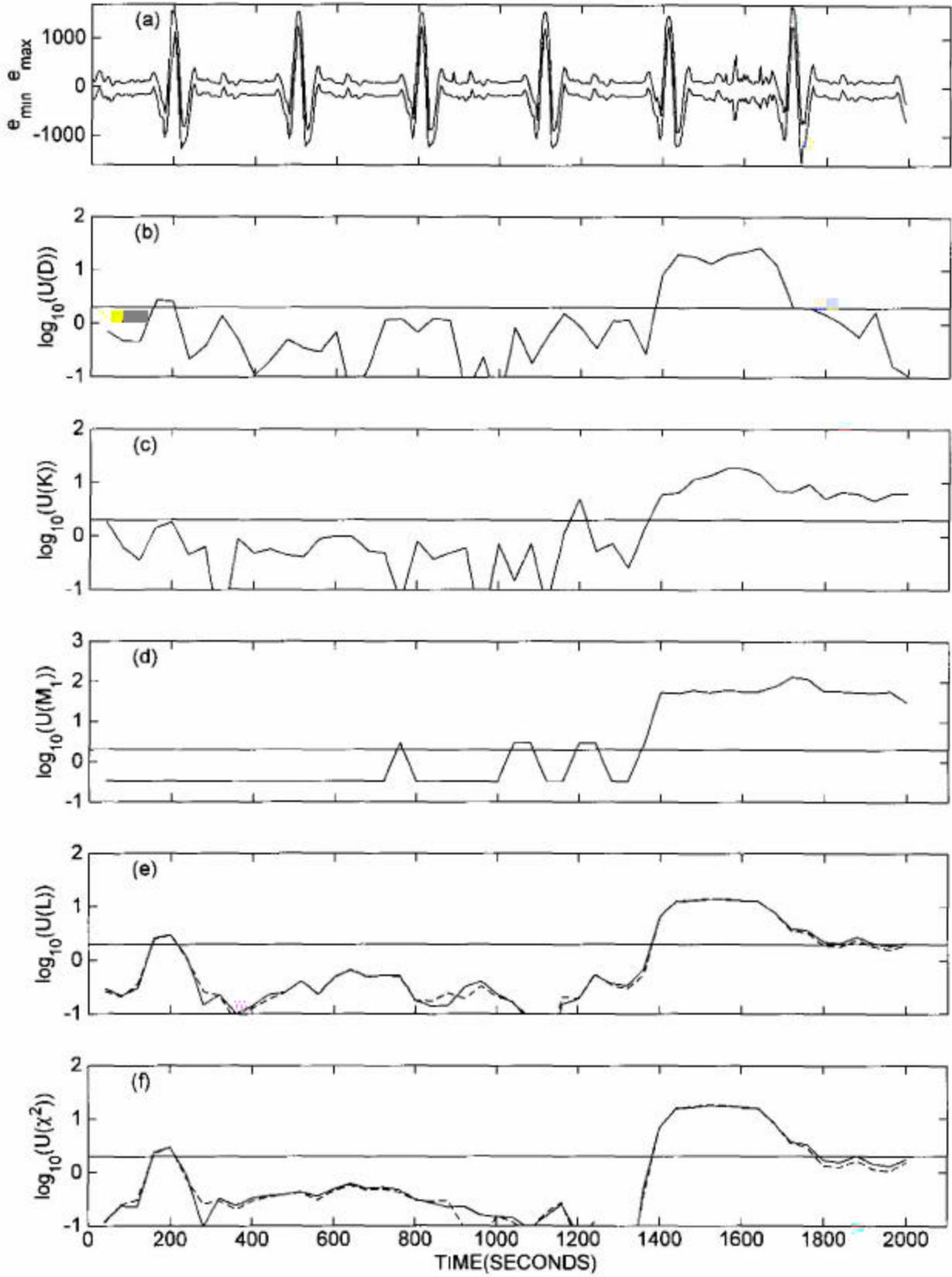
ornl

- **ORNL evaluated 5 EKG datasets**
 - Digital data from Holter recordings
 - Sampled at 256 Hz
- **Nonlinear techniques provide >6 minutes of warning**
 - No false positives or negatives in 5 datasets
 - Need more data for validation

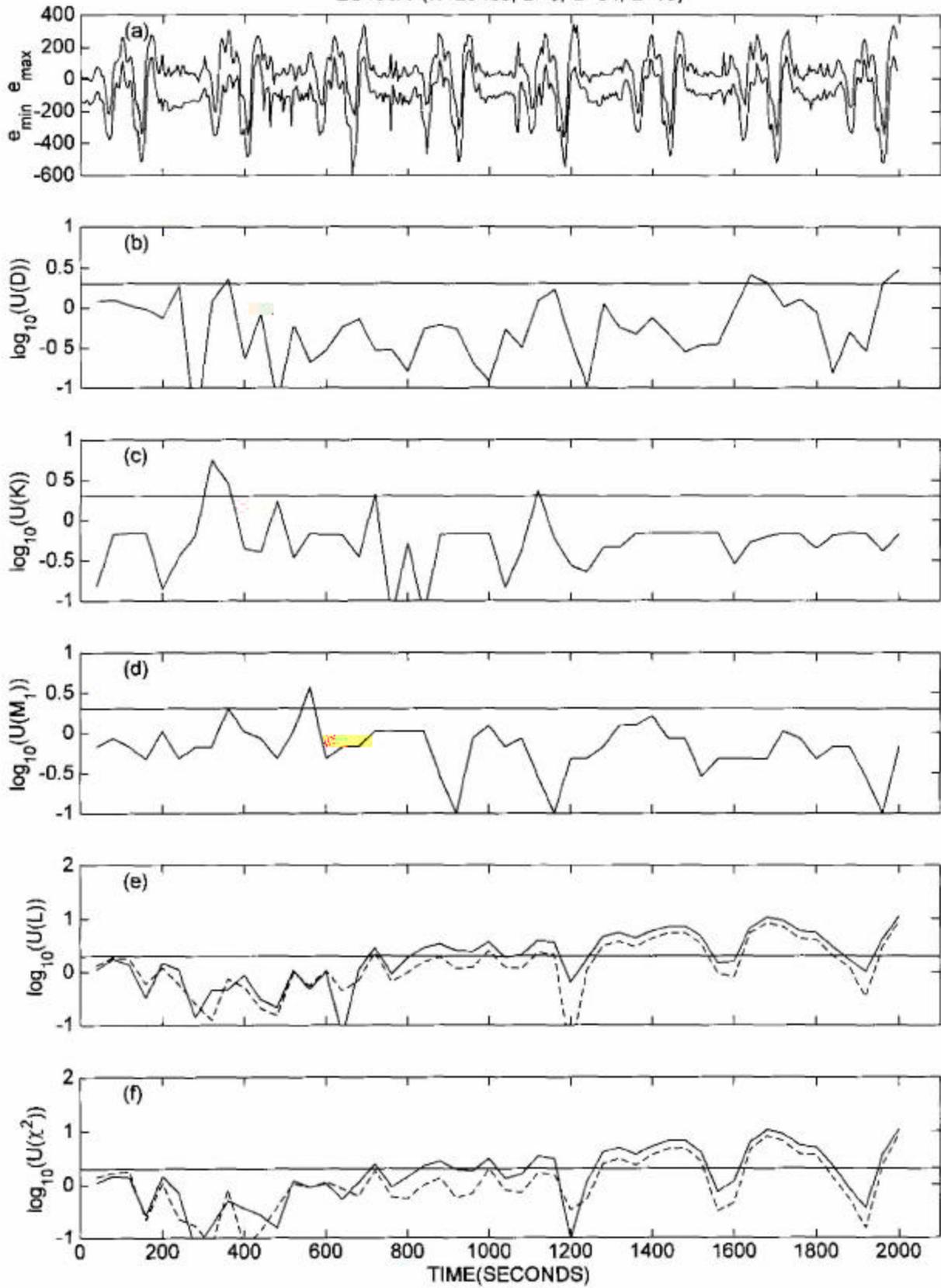
EC419A (N=20480, D=3, S=34, L=15)



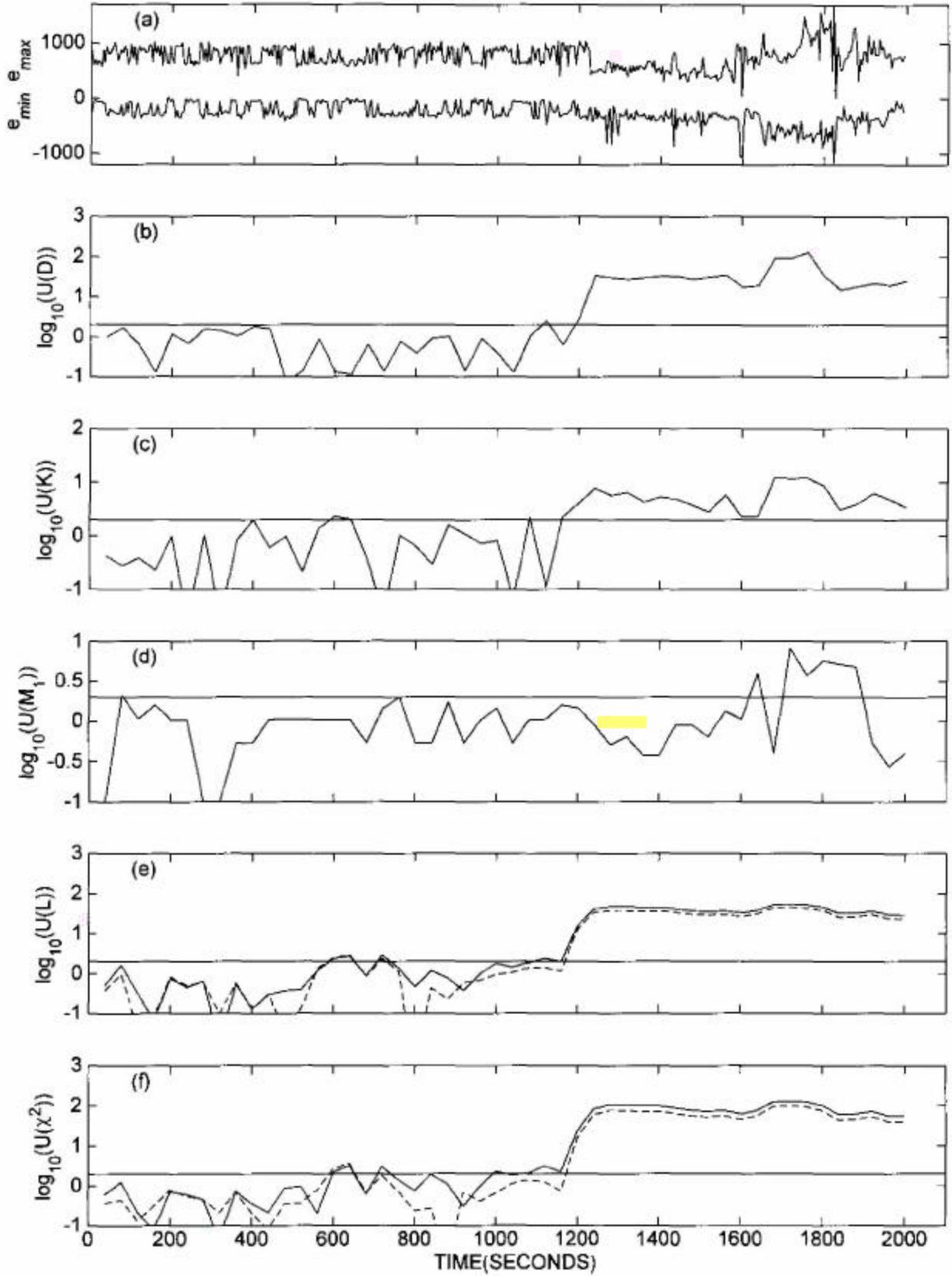
EC420A (N=20480, D=3, S=34, L=3)



EC430A (N=20480, D=3, S=34, L=15)



EC602A (N=20480, D=3, S=34, L=7)



EC605A (N=20480, D=3, S=34, L=15)

