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# A Stochastic Early Warning System for Detecting Environmental Shocks in Morocco

## Communication Info


**Authors:**
Oussama RIDA[1]
Tariq RACHID [2]
Anouar HASBAOUI [2]

*[1] Cadi Ayyad University (UCA), Essaouira Higher School of Technology, Interdisciplinary Laboratory for Research in Environment, Management, Energy and Tourism (LIREMET), Av Abdelkrim Khattabi, B.P. 511 - 40000, Marrakech, Morocco*
*[2] ESCA Business School, Casablanca, Maroc, 67-3 Avenue de l'Aéropostale Casablanca Finance City (CFC) 20250 Casablanca-Maroc*



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## Abstract


In Morocco, environmental shocks like heat waves, droughts, and heavy precipitation are posing a growing danger to water security and ecological stability [1].
Detecting early signals of these transitions remains a central challenge in applied mathematics and environmental risk modeling. This work provides a Stochastic Early Warning System (SEWS) that uses a probabilistic dynamic framework to model environmental indicators, such as temperature fluctuations, precipitation anomalies, and drought indices [2].
We use historical Moroccan meteorological data, empirical validation, and reliable statistical inference techniques to determine parameters in order to extract early warning signals [3]. The findings demonstrate that the recommended approach provides practical and mathematically based tools for proactive environmental monitoring and climate resilience planning, offering notable lead times prior to documented environmental stress occurrences.




## References


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