ACADEMIE ROYALE DES SCIENCES D'OUTRE-MER
KONINKLIJKE ACADEMIE VOOR OVERZEESE WETENSCHAPPEN

Classe des Sciences techniques
Klasse voor Technische Wetenschappen

27.XI.2025

Data Rescue of Millions of Daily Precipitation and Temperature Records collected within the Congo Basin

by

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KEYWORDS. — Data Rescue; Machine Learning; Historical Weather Data; Climate Archives.

SUMMARY. — Archives of observed weather data present unique opportunities for scientists to obtain long-time series of the historical climate for many regions of the world. Unfortunately, most of these observational records are to-date available only on paper, and thus require digitization and transcription to facilitate analysis of climatic trends. Here we present a new open-source software, MeteoSaver, which uses machine learning (ML) algorithms to transcribe handwritten records of historical weather data. As an illustration and evaluation of the software, we apply MeteoSaver to ten pictured sheets of handwritten temperature observations from the Democratic Republic of Congo. The results show that MeteoSaver can be applied to a range of handwriting styles and varying tabular structures, paper sizes, and maintenance conditions, highlighting its potential for transcribing tabular weather observations, and therefore fill the knowledge gap in data scarce regions.

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