

2025 IEEE Multi-conference on Natural and Engineering Sciences for Sahel's Sustainable Development (MNE3SD 2025)

**Bobo-Dioulasso, Burkina Faso
27-29 November 2025**

IEEE Catalog Number:
ISBN:

CFP25BF2-POD
979-8-3315-6956-3



Copyright © 2025, IEEE

All Rights Reserved

Copyright and Reprint Permissions:

Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

*** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.

IEEE Catalog Number:	CFP25BF2-POD
ISBN (Print-On-Demand):	979-8-3315-6956-3
ISBN (Online):	979-8-3315-6955-6

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA

Phone:	(845) 758-0400
Fax:	(845) 758-2633
E-mail:	curran@proceedings.com
Web:	www.proceedings.com

TABLE OF CONTENTS

ArandisRDF: a hybrid approach with ArangoDB and Redis for storing and querying RDF data	1
<i>Digonaou Kpekpassi, David Faye</i>	
Integration model of the DHT CLOAK in the SDN architecture as a virtual network	9
<i>Maliki Badolo, Telesphore Tiendrebeogo</i>	
Agent-based modeling of the energy consumption of households in urban area: application to the city of Ouagadougou	17
<i>Dramane Coulibaly, Mahamadou Belem, Mesmin T Dandjinou, Marie Y.T. Tapsoba</i>	
Modeling Dynamic Trust for Cooperative Operations in Edge Computing Environments	25
<i>Jean De La Croix Kiguigouléli Ki, Boureima Zerbo</i>	
A Metamodel for Simplifying Infrastructure Deployment Using Vagrant	33
<i>Flavien Hervé Somda, Arnold Stéphane Kabore, Boureima Zerbo</i>	
Towards An Ecore-Based, Uncertainty-Aware Metamodel for Auditable Geopolitical Decision Support	40
<i>Flavien Hervé Somda, Désiré Guel, Sékou Kangoye</i>	
Spatial Analysis of Historical and Near-Future Droughts using the SPI and SPEI Indices in the Competence Area of the Nakanbé Water Agency in Burkina Faso (1981–2050)	48
<i>Charouna Compaoré, Wenceslas Somda, Marcel Bawindsom Kébré, Zacharie Koalaga</i>	
Assessing the Effects of Decentralized Photovoltaic Power Plants on the Transmission Grid: A Senegal Case Study	58
<i>Mouhamadou Falilou Ndiaye, Diatta Sene, Ibrahima Sory Sidibe, Cheikh B.H Kelly, Lamine Thiaw</i>	
LightGBM and Voting Classifier: Top Performers in Supervised Classification for Vector-Borne Diseases in Hauts-Bassins, Burkina Faso	66
<i>Issouf Ouedraogo, Ismaila Ouedraogo, Borlli Michel Jonas Some</i>	
Assessing Flood Risks in Burkina Faso's Urban Centers Using Bias-Corrected projected Extreme Precipitation data from CMIP6 Models	72
<i>Songuiyamina Bienvenue Sandamba, Wenceslas Somda, Marcel Bawindsom Kebre, Antoine Bere</i>	
Analysis of Evaporation-Induced Water Losses from Rectangular and Cylindrical Rainwater Harvesting Basins (Non-Truncated and Frustum) in a Hot Tropical Climate (Burkina Faso)	85
<i>Mariatou Zon, Soumaïla Gandema, Marcel Bawindsom Kébré, Wenceslas Somda, Zacharie Koalaga</i>	
Impact of rice biomass and cement stabilization on the mechanical and thermal properties of compressed soil bricks	94
<i>Rimyalegdo Kiébré, Emmanuel Ouédraogo, Nebnoma Justin Sawadogo, Kabré Sayouba</i>	
Towards an Ontology and Knowledge Graph-Based Recommendation Approach Enhanced with Large Language Models for Civil Service Recruitment in Burkina Faso	100
<i>Wend-Panga Régis Cédric BÉRE, Yaya Traoré, P. Justin Kouraogo, Daouda Ouedraogo</i>	
Agent-based modeling for large-scale population dynamics projection: the case of Burkina Faso	108
<i>Zidama Adama Soulama, Mahamadou Belem, Zanga Daouda Ouattara</i>	
Implementing LoRaWAN End-Device Classes A, B, and C in LoRaFlexSim	116
<i>Hamadoun Tall, François d'Assise Sanou, Gérard Chalhoub, Tiguiane Yelemou</i>	

CMIP6 Projections of Agroclimatic Characteristics across the Climatic Zones of Burkina Faso, West Africa	123
<i>Mazo Dabré, Moussa Waongo, Marcel Bawindsom Kébré, Jacques Ulrich Diasso</i>	