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| 1. Record Nr. | UNINA9910913772903321 |
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| Titolo | Mathematical Research for Blockchain Economy : 5th International Conference MARBLE 2024, Malaga, Spain // edited by Stefanos Leonardos, Elise Alfieri, William J. Knottenbelt, Panos Pardalos |
| Pubbl/distr/stampa | Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2024 |
| ISBN | 9783031689741 3031689747 |
| Edizione | [1st ed. 2024.] |
| Descrizione fisica | 1 online resource (372 pages) |
| Collana | Lecture Notes in Operations Research, , 2731-0418 |
| Altri autori (Persone) | AlfieriElise KnottenbeltWilliam J PardalosPanos |
| Disciplina | 005.7588 |
| Soggetti | Finance Blockchains (Databases) Mathematical optimization Social sciences - Mathematics Business enterprises - Finance Econometrics Financial Economics Blockchain Optimization Mathematics in Business, Economics and Finance Corporate Finance Quantitative Economics |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di contenuto | Tiered Mechanisms for Blockchain Transaction Fees -- Liquid Staking Tokens in Automated Market Makers -- The Cost of Permissionless Liquidity Provision in Automated Market Makers -- Global Trends in Cryptocurrency Regulation: An Overview -- Collateral Portfolio Optimization in Crypto-Backed Stablecoins -- Forecasting Realised Volatility: Implied and GARCH Volatility in Bitcoin, Gold, Oil Markets -- Multi-Agent Privacy-Preserving Micro-Payment Verification for Offline |

Resource-Constrained Devices using Smart Contracts -- Discrete & Bayesian Transaction Fee Mechanisms -- Quantifying Arbitrage in Automated Market Makers: An Empirical Study of Ethereum ZK Rollups -- From Niche to Mass Adoption: Taking Native Staking Mainstream -- Stackelberg Attack on Protocol Fee Governance -- Blockchain-Based Identity Solutions for Artificial Intelligence: Two-sided Virtual Markets without Trust -- AdChain: Decentralized Header Bidding -- The DeFi Ecosystem Game: Proof-Via-Simulations -- Velocity, Holding Time and Lifespan of Cryptocurrency in Transactions -- Profiting off the High Correlation of Cryptocurrency Pairs Using Statistical Arbitrage -- Robbed withdrawal -- Global Taxonomy of Stablecoins -- An analysis of the MiCA regulation and its impact for the blockchain-based economies.

Sommario/riassunto

This book presents the best papers from the 5th International Conference on Mathematical Research for Blockchain Economy (MARBLE) 2024, held in Malaga, Spain. While most blockchain conferences and forums are dedicated to business applications, product development, or Initial Coin Offering (ICO) launches, this conference focused on the mathematics behind blockchain to bridge the gap between practice and theory. Blockchain technology has been considered as the most fundamental and revolutionizing invention since the Internet. Every year, thousands of blockchain projects are launched and circulated in the market, and there is a tremendous wealth of blockchain applications, from finance to healthcare, education, media, logistics, and more. However, due to theoretical and technical barriers, most of these applications are impractical for use in a real-world business context. The papers in this book reveal the challenges and limitations, such as scalability, latency, privacy, and security and showcase solutions and developments to overcome them.
