Welcome to the first edition of The MEV Letter

- a collection of papers, articles, events, and resources related to MEV. This list has previously been included at the end of the bi/monthly Transparency Reports, but will from now on be published separately in this letter. The Transparency Reports will continue to be published with updates related to Flashbots data, products, and research. Enjoy!

Papers & Articles

- Towards Optimal Prior-Free Permissionless Rebate Mechanisms, with applications to Automated Market Makers & Combinatorial Orderflow Auctions by Bruno Mazorra, Nicolás Della Penna explores the impact of MEV on users, discusses the Shapley value as a solution for fair compensation, and delves into the mechanisms of MEV rebates and auctions as a means to undermine the power of block builders.
- When Bidders Are DAOs by Pranav Garimidi, Maryam Bahrani and Tim Roughgarden studies auctions in which the participants are groups of bidders pooling resources, rather than individuals.
- Tweet-thread by Pranav Garimidi
- Tweet-thread by Pranav Garimidi
- Transaction Fee Mechanism Design with Active Block Producers by Pranav Garimidi, Maryam Bahrani and Tim Roughgarden introduces a model of active block producers and show that transaction fee mechanism designs such as EIP1559 is fundamentally more difficult with active block producers than with passive ones.
- Tweet-thread by Tim Roughgarden
- Tweet-thread by Tim Roughgarden
- Arbitrageurs' profits, LVR, and sandwich attacks: batch trading as an AMM design response by Andrea Canidio and Robin Fritsch discusses an function maximizing AMM model where all trades are batched and executed at the marginal price, ensuring fair, equilibrium prices due to arbitrageur competition and eliminating sandwich attacks.
- Tweet-thread by Andrea Canidio
- Tweet-thread by Andrea Canidio
- The Pricing And Hedging Of Constant Function Market Makers by Richard Dewey and Craig Newbold presents a model for valuing liquidity provider mechanisms in CFMMs and estimating the value of the associated derivatives.
- Tweet-thread by Proven
- Tweet-thread by Proven
- Analyzing Geospatial Distribution in Blockchains by Shashank Motepalli and Hans-Arno Jacobsen looks at the geospatial diversity of validators in Ethereum and introduces GeoDec, an emulator to measure the interplay between a validator's location and performance.
- Censorship Resistance in On-Chain Auctions by Elijah Fox, Mallesh Pai and Max Resnick explores a new definition of censorship resistance as "the amount it would cost the adversary to censor a transaction for a fixed interval of time as a function of the associated tip".
- Censorship Resistance in On-Chain Auctions presentation by Max Resnick at the MEV [re]search-athon at ETHDenver 2023
- Tweet-thread by Mas Resnick
- Tweet-thread by SMG
- Follow up tweet-thread by SMG
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- Automated Market Making and Loss-Versus-Rebalancing by Jason Milionis, Ciamac C. Moallemi, Tim Roughgarden, Anthony Lee Zhang is an updated version of the paper examining constant function market makers (CFMMs) from the viewpoint of passive liquidity providers. The revision includes an empirical study measuring the Loss-Versus-Rebalancing (LVR) for the Uniswap v2 WETH-USDC pair.
- Tweet-thread by Anthony Lee Zhang
- Tweet-thread by Anthony Lee Zhang
- Payload-timeliness committee (PTC) – an ePBS design by Mike Neuder and Francesco presents a new design for ePBS called Payload-Timeliness Committee (PTC). The design outlines a new slot anatomy, block production, and honest attesting behavior.
- Opportunities and Considerations of Ethereum's Blockspace Future by Drew Van der Werff and Alex Matthews explore the design space for blockspace derivatives and selling future blockspace, including how these markets may strengthen price discovery of gas.
- Tweet-thread by Drew Van der Werff
- Tweet-thread by Alex Matthews
- Tweet-thread by Drew Van der Werff
- Tweet-thread by Alex Matthews
- Arbitrage loss and how to fix it by Markus Schmitt identifies three ways AMMs lose value to arbitrage: stale prices, backrunning, and DEX-DEX gains. The post suggests that LPs can capture these losses by implementing asymmetric and dynamic fees, which adjust based on the distance to the market price.
- Tweet-thread by Markus Schmitt
- Tweet-thread by Markus Schmitt
- The Myth of Good Arbitrage by Markus Schmitt challenges the common belief that arbitrage is necessary for market efficiency and argues that arbitrage is a net loss in DeFi, suggesting that it drains liquidity and hinders DeFi's competitiveness.
- Tweet-thread by Markus Schmitt
- Tweet-thread by Markus Schmitt
- Proposer-Builder Separation (PBS) and Enshrined/in-protocol PBS in Ethereum by YQ provides introductions to PBS, ePBS, PEPC, and Optimistic Relaying.
- Tweet-thread by YQ.
- Tweet-thread by YQ.

Podcasts & Videos

- MEV Protection, OFAs, & Uniswap V4 | MEV Decoded Part 2 hosted by Blair Marshall from Blocknative discuss how users can get protection from frontrunning through OFAs and more MEV-aware applications with guest Felix Leupold from Cow Protocol.
- What Censorship Resistance Can Do For You with Sreeram Kannan (EigenLayer), Elijah (Duality Labs), Max Resnick (SMG) & Mallesh Pai (SMG) talked about competing definitions of censorship resistance and how the recent paper on Censorship Resistance in On-Chain Auctions.

Posts & Threads

- Toni Wahrstätter posted takeaways on the impact of latency and optimistic relaying in MEV-Boost. The post also introduces 3 new diagrams visualizing optimistic relaying and bid submissions on mevboost.pics.
- Taker initiated a list of repos of people writings strategies on Artemis.

Upcoming events

EthCC[6] is just around the corner, and with the many side events taking place the schedule is packed with MEV-related content. Flashbots will participate in discussions, panels, and events throughout the week. We will also host a series of salons at our Pi-rate ship, more information on these events can be found in our forum post:

[WIP] MEV-Week Paris: From Zero Sum To Positive Sum

To get a comprehensive overview of all

the events taking place during the week, make sure to check out our guide:

[MEV Week Paris

](https://www.notion.so/flashbots/MEV-Week-Paris-6522b2aa9c2f4acabbc648c9965f0751)

Other events:

- July 12th: All You Wanna Know About Cross Chain MEV Market with Matt Deible (ODOS), Julian (EF: Robust Incentives Group), Yixin Cao (EigenPhi) and Bridge Baron (MEV Searcher) will discuss the opportunities and threats associated with cross-chain MEV, how to design fair markets and how upcoming EIPs may impact cross-chain MEV.

That's it for this week! Feel free to share additional resources in the replies below or in the bookmark-topics

Sign up here if you wish to receive The MEV Letter straight to your inbox.