The MEV Letter

is a weekly collection of papers, articles and resources related to MEV. The intention of this letter is to provide a comprehensive summary of the latest research, discussions, and developments in the space, with links for further reading.

Papers & Articles

- Who Wins Ethereum Block Building Auctions and Why? by Burak Öz, Danning Sui, Thomas Thiery, and Florian Matthes analyze the factors driving centralization in the builder market and provides insights for designing block auctions to preserve decentralized and censorship-resistant properties.
- Thread by Burak Öz
- Post by Thomas Thiery
- Thread by Burak Öz
- Post by Thomas Thiery
- On sybil-proof mechanisms by Minghao Pan, Akaki Mamageishvili, and Christoph Schlegel show that in the single-parameter mechanism design environment, the only non-wasteful, symmetric, incentive-compatible and sibyl-proof mechanism is a second price auction with symmetric tie-breaking.
- SAMM: Sharded Automated Market Makers by Hongyin Chen, Amit Vaisman, and Ittay Eyal present an AMM with multiple independent smart contracts shards, allowing for parallel execution.
- Post by Ittay Eyal
- Post by Ittay Eyal
- Intro to the PBS Foundation by Simon Brown provides an overview of the PBS Foundation's mission, activities, and funded projects in supporting research related to PBS in the Ethereum ecosystem.
- Decentralising Rollups by @Quintus explores the challenges of L2 decentralization and outlines sub-protocols to improve liveness, safety, and user MEV protection.
- Thread by @Quintus
- Thread by @Quintus
- Based Preconfirmations with Multi-round MEV-Boost by Lin Oshitani introduces MR-MEV-Boost, designed to enable based preconfirmations by running multiple rounds of MEV-Boost auctions within a single slot.
- Post by Lin Oshitani
- Post by Lin Oshitani
- Commit-Boost: Proposer Platform to Safely Make Commitments by Drew Van der Werff outlines the background, design principles, and roadmap of Commit-Boost.
- Thread by Commit-Boost
- Thread by Commit-Boost
- Intents Newsletter: Volume 2 by apriori presents new Anoma Research Topics related to cross-chain integrity, solving, TEEs, and more.
- Thread by apriori
- Thread by apriori
- How Self-Built Blocks Unintentionally Introduce Base Fee Volatility by Blair Marshall examines how locally built blocks unintentionally increase base fee volatility due to private transactions and MEV-Boost timing games.
- Thread by Blocknative
- Thread by Blocknative
- Builder Bidding Behaviors in ePBS by Terence Tsao describes how bidding strategies by builders might change under ePBS.

- Post by Terence Tsao
- Post by Terence Tsao
- Diseconomies of Scale: Anti-Correlation Penalties (EIP-7716) by Toni Wahrstätter discusses the economy of scale in PoS and outlines how EIP-7716 encourages validator decentralization through anti-correlation penalties.
- Post by Toni Wahrstätter
- Post by Toni Wahrstätter
- Socially Optimal Transaction Fee Mechanism Design by David Lancashire details a working paper that proves it is possible to have a socially optimal and

collusion-proof transaction fee mechanism.

- Build FHE Coprocessor on TEE by @tolak outlines the concept of an FHE coprocessor

and how it can be built using TEEs on Phala Network.

- Overheard at TEE Salon by Automata Intern explores the challenges and ways of verifying TEE attestations.
- Dark.Pool Researchathon: Dark Index Token, enabled by SUAVE by @dex addresses the problem of front-running index tokens being rebalanced, and proposes constituent hiding

through deploying the token contract in a TEE.

- Enshrined Harberger Lease for Execution Tickets by Julian Ma explains how ETs assign block-proposing rights via a lottery to prevent multi-block MEV, and how Harberger leases

can further enhance their efficiency.

- Chain Abstraction Landscape by ASXN explores potential ways to reduce fragmentation and improve interoperability through chain abstraction, intents, and AI agents.
- Thread by ASXN
- Thread by ASXN
- The Future of DEX Trading by Derek Walkush and J.Hackworth studies the impact of UniswapX on users trading via the Uniswap front-end.
- Thread by Derek Walkush
- Thread by Derek Walkush

Posts & Threads

- Titan Relay published a thread to announce that they now support permissionless block submissions from any builder.
- Alex Nezlobin published a thread that investigates the claim by CoW AMM that their USDC/WETH pool outperforms its counterpart on Uniswap v2.
- Reply by CoW DAO
- Reply by Ciamac Moallemi
- Reply by MilliΞ
- Reply by CoW DAO
- Reply by Ciamac Moallemi
- Reply by MilliΞ
- Andrea Canidio published a thread to share thoughts on using markouts to evaluate AMM performance and suggests measuring LP profits directly instead.
- Max Resnick published a thread arguing that encrypted mempools don’t solve censorship resistance.
- Austin King published a post to highlight the importance of AA for chain abstraction and details the status of EIPs 4337, 3074, and 7702.

- Thumbpark published a thread that describes how TEEs operate and how they compare to ZKPs, FHE, and MPC.
- Hudson Jameson published a thread that provides an overview of TEEs, and some of the potential use cases related to blockchains.
- DeFi Cheetah published a post outlining some of the trade-offs and potential complementary uses between ZK, MPC, FHE and TEE.
- Renegade published a thread describing some of the trade-offs between using MPC or TEE for on-chain privacy.
- Reply by dmarz
- Reply by dmarz
- dmarz published a post with excerpts from the report by Common Prefix on censorship resistance and efficiency.
- Mark Tyneway published a post to highlight the experimental block builder API spec for the OP Stack by dmarz.
- Anuj Shankar published a thread to highlight the benefits of preconfirmations and based rollups.
- Alex Nezlobin published a post to challenge the claim that trading firms would be willing to send transactions to a competitor's builder if it runs inside a TEE.

Talks & Discussions

- Recordings from Modular Summit 3.0 by Celestia and Maven 11, including Metagame.wtf curated by Flashbots, have been uploaded.
- Thread by Wolfgang Vitale
- Thread by ballsyalchemist
- Post by Xinyuan Sun
- Post by Shea Ketsdever
- Thread by Wolfgang Vitale
- Thread by ballsyalchemist
- Post by Xinyuan Sun
- Post by Shea Ketsdever
- FHE Summit by FHE Onchain
- MEV mitigation with (T)FHE by Jonathan Passerat-Palmbach
- Panel: Evaluating Tradeoffs Between MPC, ZK, FHE, TEE with Walkush, Nigel Smart, Joe Andrews, Dimitris Mouris, Sylvain Bellemare and Derek Walkush
- MEV mitigation with (T)FHE by Jonathan Passerat-Palmbach
- Panel: Evaluating Tradeoffs Between MPC, ZK, FHE, TEE with Walkush, Nigel Smart, Joe Andrews, Dimitris Mouris, Sylvain Bellemare and Derek Walkush
- SUAPP Development: More Tools by brock extends the previous livestream with a deep dive into SUAVE development tools.
- Recordings from L2con by Epic Web3 have been uploaded with talks on scalability, modularity, chain abstraction, and more.
- ePBS (EIP-7732) breakout room #5 hosted by Potuz covered the latest progress on the consensus spec and client implementation.
- Agenda by Potuz
- Notes by Terence Tsao
- Agenda by Potuz
- Notes by Terence Tsao

- Credible Solver DeepDive hosted by OneBalance invites Ankit Chiplunkar, Connor, Thognad, Hrojan Torse, and Arjun for a conversation on solver networks and chain abstraction.
- The Gwart Show: The Realignment invites Max Resnick to discuss Ethereum's potential shift towards faster block times and multi-proposer systems.
- Bell Curve: Deep Dive: The CAKE Framework & Building a One Click Experience invites Stephane Gosselin and Hart Lambur to discuss chain abstraction, the CAKE Framework, andOneBalance.

Other

- Valtrack by Chainbound provides live estimates on the geographical distribution of Ethereum validators.
- Thread by Naman Garg
- Thread by Naman Garg
- Confidential Data Store Pricing Idea by dmarz describes a simple pricing strawman fordistributed, persistent storage for SUAPPs.
- Reusable Enclaves by Andrew Miller highlights Reusable Enclaves for Confidential Serverless Computing by Shixuan Zhao, Pinshen Xu, Guoxing Chen, Mengya Zhang, Yinqian Zhang, and Zhiqiang Lin which addresses the credible conditional recall problem in SGX enclaves.
- Proposal: Proposer MEV Protect by Eric Sanchirico invites node operators to participate in the testing ofProposer MEV-Protect by bloXroute.

Upcoming events

- July 24-30

: EDCON 2024 by De University of Ethereum

- July 28

: Tané Summit #1 by Tané

- Aug 6

: The MEV Workshop at the Science of Blockchain Conference 2024 (MEV SBC '24)by Flashbots

- Aug 7-9

: The Science of Blockchain Conference 2024 (SBC'24) by IC3, Stanford Center for Blockchain Research and UC Berkeley RDI.

- Aug 16-17

: Frontiers by Paradigm * Thread by Georgios Konstantopoulos

- Thread by Georgios Konstantopoulos
- Aug 20-27

: MEV TOKYO by Titania Research

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