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.

In order to ensure The MEV Letter meets its objectives and provides an optimal reading experience, we've set up a [survey

](https://3eoyy3ayc8w.typeform.com/to/KrtWUvSV) to better understand reader preferences and expectations.

We do not include any trackers in the emails, which means that we can not perform direct analytics on reader behavior. Instead, we rely on your feedback to optimize content and improve the publication further. The [survey

](https://3eoyy3ayc8w.typeform.com/to/KrtWUvSV) is quick and your engagement is very much appreciated. Thank you

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Papers & Articles

- The Impact of Market Conditions and Fee Algorithms on the Design of a Competitive AMM by Vladislav Volosnikov, Alexander Pimenov and Vladimir Tikhomirov analyze LP profitability in AMMs under different market conditions, and explores options to implement dynamic fee mechanisms.

- Thread by atiselsts.eth

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- Research Note: Review of Maximal Extractable Value and Blockchain Oracles by Rebecca Humphry, Pavle Avramovic, Francis Acevedo, Sami Alkhair and Dr Arthur Gervais examine MEV and oracles in DeFi and discuss regulatory actions for market integrity and consumer protection.

- TEE Party with SUAVE: Could Trusted Execution Environments Replace Trusted Actors? by Miha Lotric provides an overview of TEEs and examines how SUAVE utilizes TEEs for programmable privacy and reducing dependencies on trusted intermediaries.

- Announcing Suave-std by Ferran introduce suave-std – a collection of Solidity contracts and libraries designed to streamline the development process for SUAPPs.

- Grounded Relay: Superpowers from Relay Coordination by Drew Van der Werff explores the potential for MEV-Boost relays to offer additional products and services to validators and builders.

- Thread by Drew Van der Werff

- Thread by Drew Van der Werff

- The price is right: Realigning proposer-builder incentives with predictive MEV-burn by Thomas Thiery summarize key features and tradeoffs, map out the design space, and propose a new design for a single slot, live auction MEV-burn mechanism.

- Minimal ePBS - Beacon Chain Changes by Terence Tsao details ePBS, its essential components from the beacon chain perspective, and areas that require further research.

- Inclusion lists: execution, consensus, & engine spec overview by Mike Neuder presents a minimal potential spec for EIP-7547, outlining changes to execution specs, consensus specs, and execution APIs.

- Thread by Mike Neuder

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- Consider the ePBS by Mike Neuder describes the February 6th incident that caused 9 missed slots and details how ePBS would handle similar situations.

- Astria: The Shared Sequencer Network by Elizabeth presents the design of Astria's shared sequencer and how it's intended to provide rollups with fast finality, censorship resistance, composability guarantees, and decentralization.

- Preconfirmations: The Fulfillment-Delivery Paradigm by Primev explores the applications of preconfirmations and how they can be used to mitigate execution risk.

- Thread by Primev

- Thread by Primev

- [Uniswap V4 hook: LVR-minimization with Per-block conversion vs. Futures contracts](#) by [sm-stack](#) and [chris](#) compares designs to minimize LVR on Uniswap V4 based on simulations that incorporate the [Diamond Protocol](#).

- [CoW Swap: Intents, MEV, and Batch Auctions](#) by [Cookies Research](#) details how CoW Swap use an intent-based architecture and batch auctions to match orders and reduce MEV.

- [MEV meets DAG: Exploring MEV in DAG-based blockchains](#) by [Rohan Shrothrium](#) and [Samuel Laferriere](#) analyze how the ordering of transactions on chains that use Narwhal DAG-based consensus mechanism, like [Sui](#) and [Aptos](#), impacts MEV.

- [Thread](#) by [Rohan Shrothrium](#)

- [Thread](#) by [Samuel Laferriere](#)

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- [mevAuction: a Multiple-Winner Auction System](#) by [mev.io](#) describes how [mevAuction](#) introduce separate auctions for Top-of-Block and Rest-of-Block, and enables proposers to sell future block space.

- [Thread](#) by [mev.io](#)

- [Thread](#) by [mev.io](#)

- [Splitting the block](#) by [Philipp Zahn](#) provides technical details for [mevAuction](#)'s separate auctions, and future block space market.

- [Off-Chain Bundles](#) by [merkle](#) introduce the ability for searchers connected to the [merkle builder](#) to reduce gas fees by separating off-chain compute from on-chain settlement.

- [Thread](#) by [merkle](#)

- [Thread](#) by [merkle](#)

- [The Language of Value: Formally Expressing MEV Opportunities](#) by [mteam](#) propose a unified format for representing and communicating MEV opportunities.

Posts & Threads

- [Alex Stokes](#) published a [thread](#) outlining open questions that needs to be resolved in order to enshrine PBS in the Ethereum protocol.

- [Potuz](#) published a [thread](#) critiquing the current PBS architecture, the use of optimistic relaying, and advocates for a shift towards ePBS.

- [Terence Tsao](#) published a [post](#) that highlights the benefits of ePBS, addresses common misunderstandings and remaining problems.

- [Anders Elowsson](#) published a [post](#) detailing the rationale behind [their candidate](#) for a new reward curve designed to find an equilibrium between validator rewards and network security.

- [snoopy](#) published a [thread](#) on why OFAs will become less profitable as markets mature.

- [Reply](#) by [0xprincess](#)

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- [Alex Nezlobin](#) published a [thread](#) that highlights a [JIT+sandwich attack](#) in the USDC/USDT Uniswap v3 pool by jaredfromsubway.

Talks & Discussions

- [Missed Slot Penalties & Timing Games: Eth's Growing Pains w/ EF & SMG](#) hosted by [Fenbushi Capital](#) invites [Mike Neuder](#), [Max Resnick](#) and [ballsyalchemist](#) to discuss the 9 missed slots on February 6th due to a bug in the optimistic mode of bloXroute max profit relay.

- [Ethereum Sequencing and Preconfirmations Call #0](#) by [Ethereum Foundation](#) invited teams running MEV infrastructure and protocol researchers to discuss sequencing and preconfirmation.

- [Notes](#) by [Drew Van der Werff](#)

- [Notes](#) by [Profesor Utonio](#)

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- [Atlas Office Hours 1: Whitepaper deep dive and protocol Q&A](#) hosted by [Atlas](#) invites [Alex Watts](#), [Ben Basche](#) and [Uri Klarman](#) for a discussion on the [Atlas Whitepaper](#), MEV, intents and execution abstraction.

- [Scraping Bits](#): [Automating Uniswap Strategies: Providing Liquidity Has No Benefit?!](#)invites [Kassandra](#) to discuss Uniswap strategies and liquidity provision through [Arrakis Finance](#).

- [Ethereum Cat Herders](#): [PEEPanEIP#127: EIP-7251:Increase MAX_EFFECTIVE_BALANCE](#) invites [dapplion](#) and [Mike Neuder](#) to discuss the design and motivation behind[EIP-7251](#).

Other

- [Benjamin Hunter](#) published a [post mortem](#) of the February 6th incident where one of[bloXroute](#) relays running in optimistic mode failed to deliver 9 blocks.

- [Multi-Agent Security Research Sprint](#) by [Apart Research](#) was a two day researchathon focused on challenges in multi-agent security, how AI systems might collude and where cooperation can fail.

Upcoming events

- Feb 21

: [MEV-Boost community call #8](#) hosted by [Alex Stokes](#) invites the MEV-Boost community to discuss Deneb, open questions, and new proposals.

- Feb 23

: [Penn Blockchain Conference 2024](#) by [Penn Blockchain](#) brings together crypto researchers and practitioners for a series of panels, including a panel titled [MEV - The Dark Forest](#) featuring [Sarah Allen](#), [rain&coffee](#), [Jon Charbonneau](#), [Tarun Chitra](#) and [magmar](#).

- Feb 27

: [Multi-Prover Hack Day](#) by [Phala Network](#), [Automata Network](#) and [The Graph](#) will feature presentations, panels and workshops on the intersection of TEEs and crypto. * [Thread](#) by [Phala Network](#)

- [Thread](#) by [Phala Network](#)

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