Fast and Furious Withdrawals from Optimistic Rollups

Abstract. Abstract goes here.

Keywords: blockchain · Ethereum · layer 2 · rollups · bridges

1 Introductory Remarks

- Optimistic rollups are being used
- Problem: multi-day (*e.g.,* seven) window for withdrawal
- Why is this a problem? Others are solving this problem (alternative bridges with a TTP). Some examples include: Speculators want to move fast, voting in a DAO (red tape), sell them on L1 or another L2, DApp access on L1 (trading if efficient on L2 but you need to do something on L1).
- Disadvantage relative to zk-rollups
- Solution: scope to liquid tokens (ETH and ERC20), open problem: NFTs or other non-substitutable tokens.
- Solution: (1) tradeable exits; (2) market to trade; (3) guaranteed exit (buyer runs ArbOS validator); (4) prediction market solution to guarantee exits to non-validating entities (importantly includes smart contracts)
- Testing: we implemented (1) and (3); for (2) and (4), use your favourite DeFi project.

2 Background

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3 Discussion

3.1 Non-Substitutable Withdrawals

- Illiquid tokens
- NFTs (substitute for ETH -> support)
- Messages (oracle updates, read calls, any L2-to-L1 message...) (still offer insurance)

3.2 Markets

Can't use an AMM
Can't run out
Simple auction
Divisible exits
Exit pools