Mimblewimble: Private, Massively-Prunable Blockchains

Andrew Poelstra

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November 21, 2016

History

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- October 8th: released a paper showing Avi's and my work for Scaling Bitcoin Milan

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- I am not Ignotus Peverell.

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- Mimblewimble transactions are inherently scriptless.

Mimblewimble Transactions

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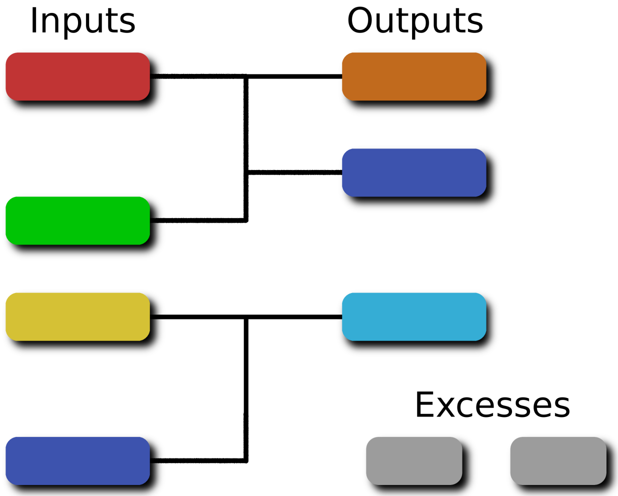
- Excess: difference between outputs and inputs (group element), plus signature (for authentication and to prove non-inflation)

Mimblewimble Transactions



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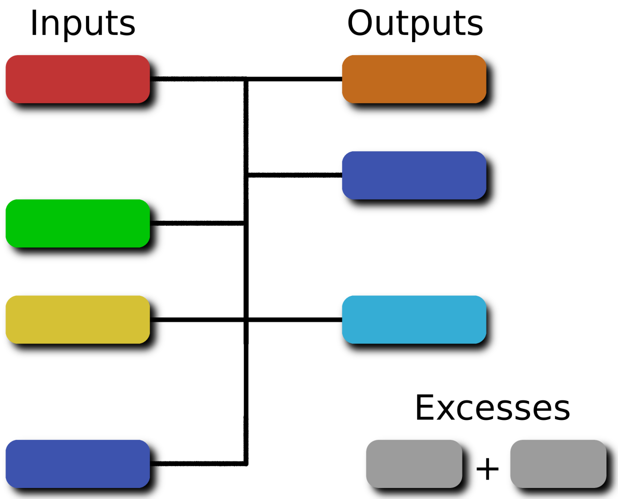

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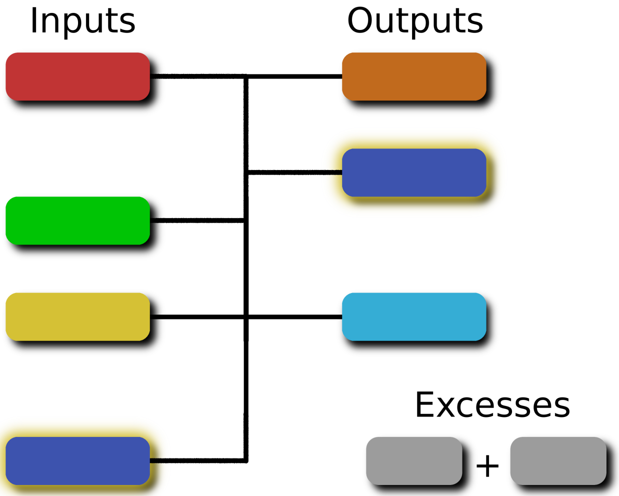

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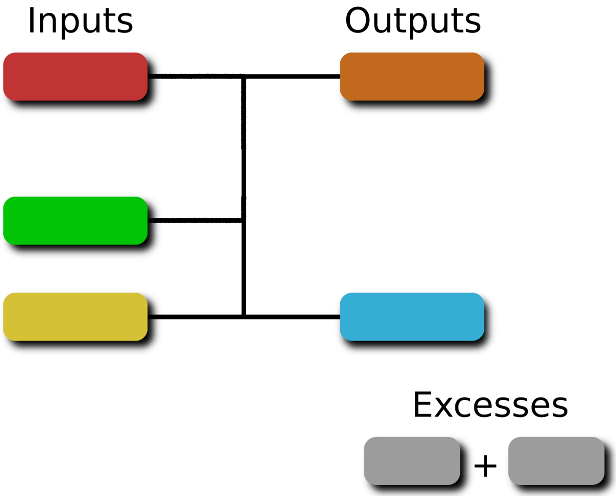

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- A list of excess value(s) and signature(s)

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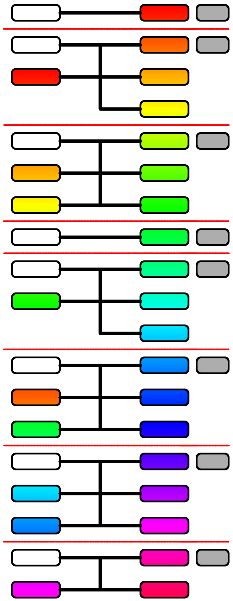

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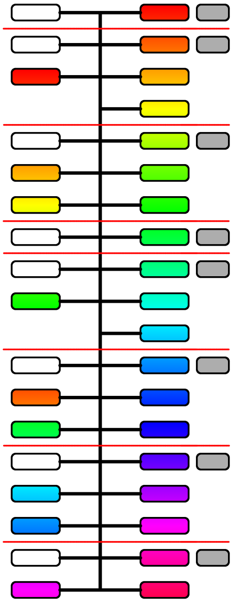

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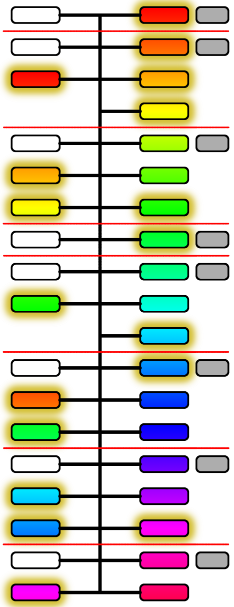

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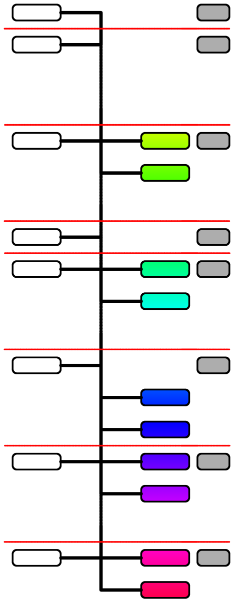

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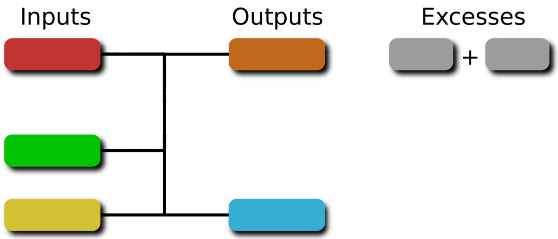
- 

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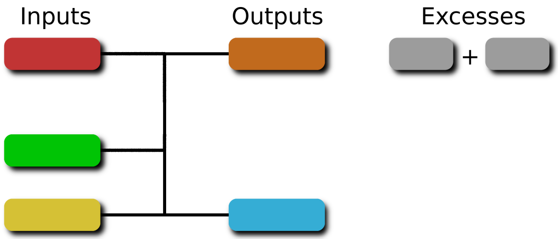

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- Rangeproofs for the above (witness data)
- Full blocks near the tip should be kept to handle reorgs
- In Bitcoin there are 150 million transactions and 40 million unsigned transaction outputs: 21.6Gb of historic data, 2Gb of UTXOs and 100Gb of UTXO rangeproofs.

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- More crypto ;)

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- Peer-to-peer protocol that can handle transaction merging
- Quantum resistance

Thank You

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