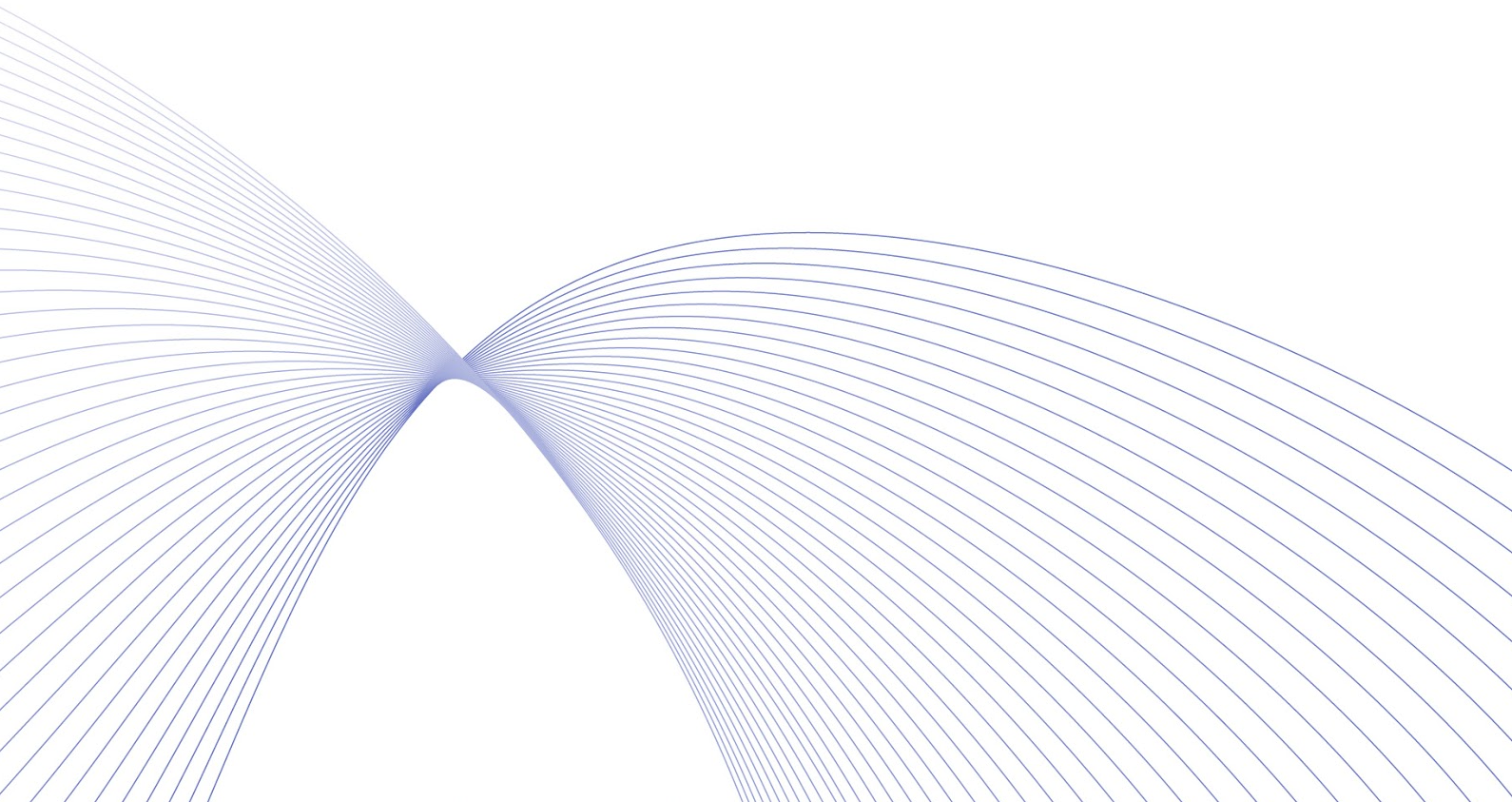# How Much Dust is in EOS Blockchain?

Research objectives

EOS blockchain has had over 850 million transactions by now, with over 600,000 accounts in the net[1]. The token has a market cap of over two billion USD, making it among top 5 cryptocurrencies according to CoinMarketCap[2]. We found it interesting to investigate how actively blockchain is used by the community.

Researchers from Unchained Capital have recently conducted a study on how dusty the Bitcoin blockchain is. Dust was defined as containers (UTXOs) of Bitcoin that cost more in fees than they hold[3]. This means that in the Bitcoin blockchain there is a share of Bitcoin that will never be spent due to the economical unprofitability of such transactions.

Dusty accounts in EOS

We have decided to extend the definition of dust for the EOS blockchain. In EOS, you have to have a certain number of tokens (N) in order to be able to conduct N*k transactions. In other words, users have to stake tokens (lock some of their tokens to be non-transferable for a certain period of time) in order to use the blockchain. And this amount of staked tokens defines the number of transactions you are allowed to make for free.

There have been debates on people having their accounts deadlocked due to the transactions scheme structure[4]. In terms of EOS, dusty accounts are the accounts that have their token balance below or equal the CPU price for making a transaction but that have a non-zero balance at the same time.

Data

The CPU price at the time of analysis was 0.198020 EOS/ms. Any account with a non-zero balance below or equal that price is considered dusty. The total number of accounts in the net at the time of analysis was 645,033 and the source for getting all the account names, EOS balances of these accounts and accounts creation dates is EOS blockchain snapshots[5].

---

[1] Data source is EOSPark: https://eospark.com/
[2] CoinMarketCap: https://coinmarketcap.com/
[3] Bitcoin Data Science (Pt. 3): Dust & Thermodynamics:
https://blog.unchained-capital.com/bitcoin-data-science-pt-3-dust-thermodynamics-615dd51f49
[4] Discussions over the issue on Reddit:
https://www.reddit.com/r/eos/comments/9a39js/minimum_cpu_guarantee_for_each_account/;
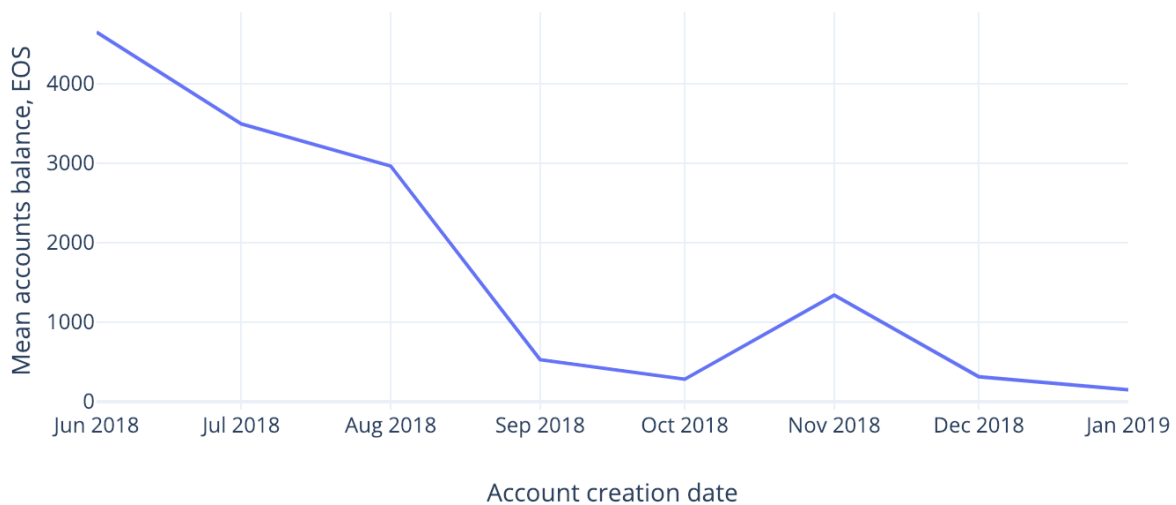https://www.reddit.com/r/eos/comments/9a5x7q/stakeforme_my_solution_to_account_deadlock_issues/
[5] EOS blockchain snapshots: https://eossnapshots.io

ICORATING

Dynamics of accounts creation
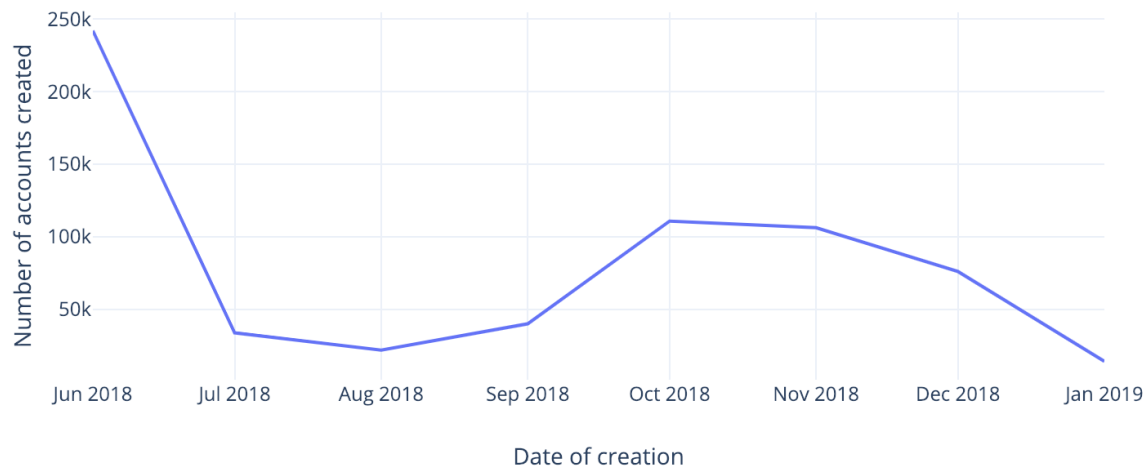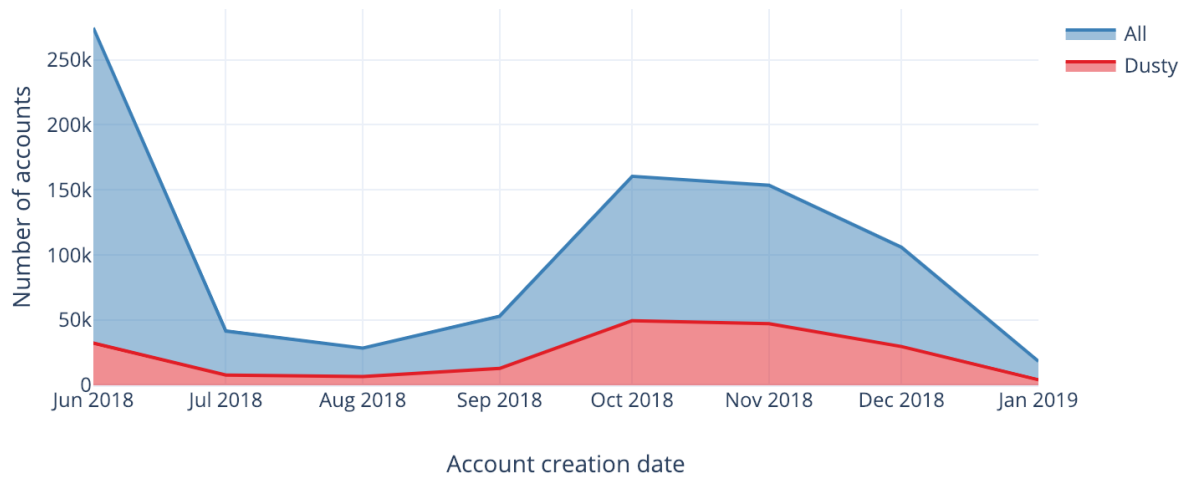
Mean account balances by account creation date

Distribution of EOS dusty accounts

Total number of dusty accounts in EOS is **191,118** which is 29.6% of all the EOS blockchain accounts that cannot make any transactions in the blockchain until they have enough tokens to stake for the CPU usage. Total amount of EOS owned by these accounts equals **6,981** which is 17,870 USD at the time of analysis.

ICORATING

Total number of zero-balance accounts is 115,075 which is 17.8% of all the accounts in EOS. This results in only **52.5% of all EOS accounts being actively used.**

Source: https://plot.ly/~fyzbt/5/#/