NEMEOS FLOOR

To be as marked to market as possible our floor price is based on actual historical transactions cleared on decentralized exchanges as opposed to mere posted ask quotes on those same exchanges, an approach akin to the one behind the recent LIBOR reform.

The algorithm is based on two safeguarding principles – one volume-bound and the other time-bound – working in conjunction and aimed at thwarting any potential wash-trading. Their implementation will be explained below.

Note: in the examples below the floor's values at a given date are produced using only ulterior data (falling before the floor's computation date), therefore those examples represent the historical floor values as they would have really been if the algorithm were put into production with a real-time data updating.

VOLUME-BOUND FLOOR

Considering a certain lookback window composed of M most recent trades (thus avoiding potential illiquidity problems), obvious outliers are removed from the sample, as well as values too far removed from the sample's mean. Then another smaller window of N (<M) most recent trades is used to devise a subset limited to the q-th percentile (q ranging anywhere from 1% to 10% percent depending on the collection). The final volume-bound floor is then computed from this last q-subset as a time-weighted mean.
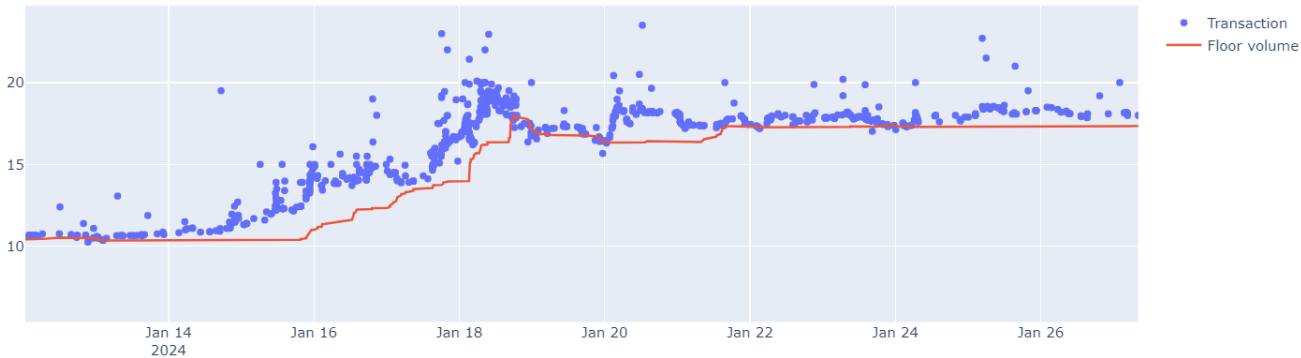
Below is an example on a currently popular NFT collection "Pudgy Penguins":
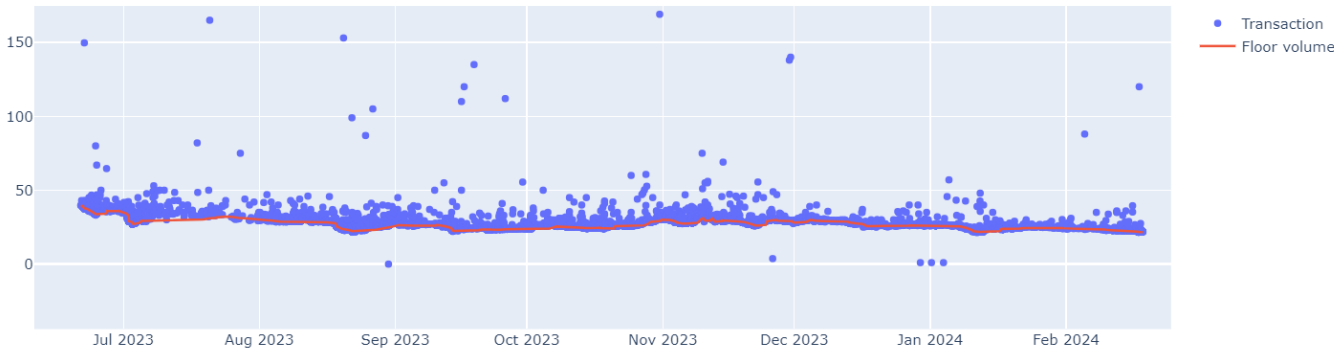

Pudgy Penguins
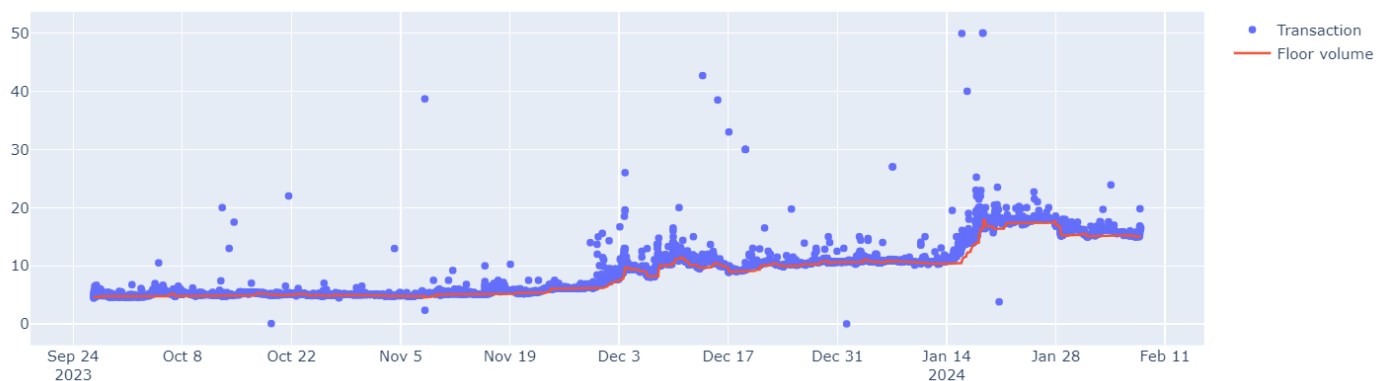
Here is a zoom on the sharp increase that happened mid-January, please note the corresponding lag on the rise, but not on the subsequent decrease.
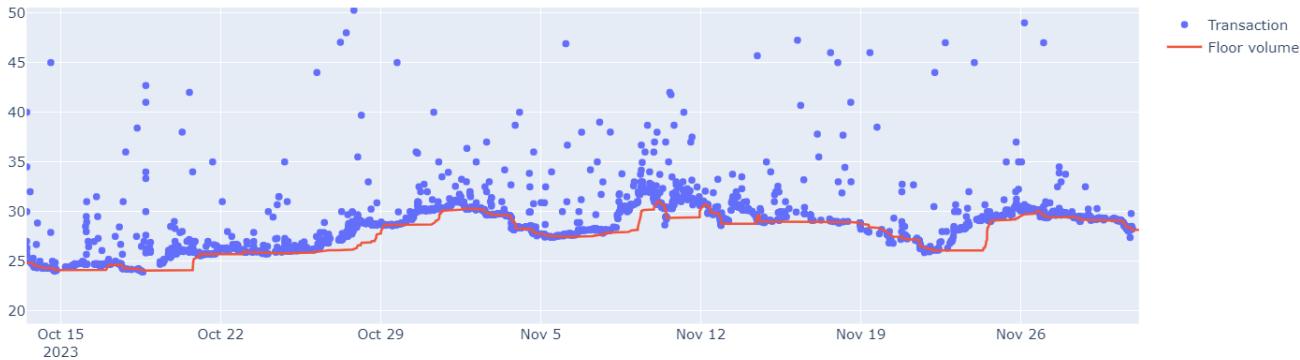
Pudgy Penguins

And here are the historical values on a the BAYC collection:
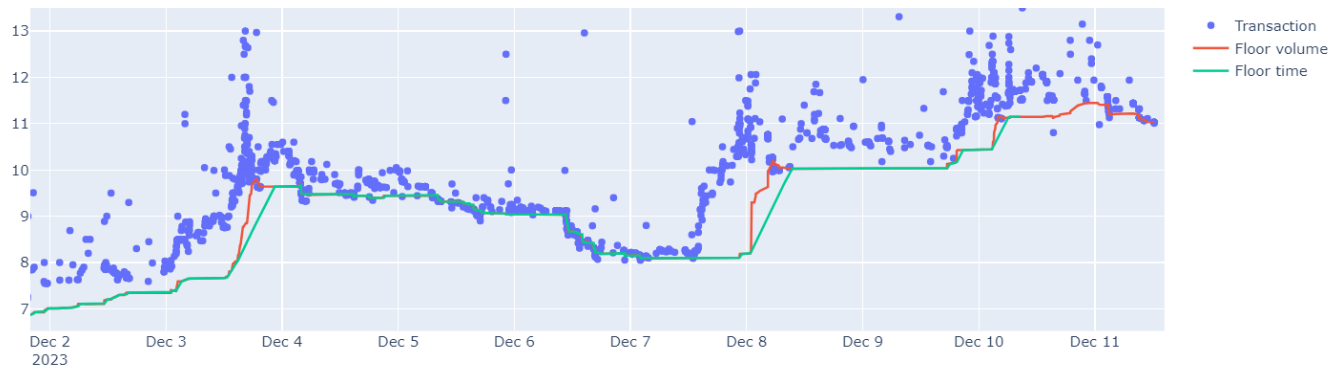
BAYC

And with a zoom:

BAYC

TIME-BOUND FLOOR

For an ill-intentioned operator to manipulate the volume-bound floor would require a number of trades high enough to jeopardize its computation: essentially at least N and at most M (guaranteed success). Risking in the process potential heavy losses if the operation were to fail due to fairly high transaction fees (2,5% on Opensea at the time of writing). If he were to succeed though, he could potentially issue a set of loans that would empty the current liquidity pool. That's why we've introduced a second time-based safety-net, whose role is to curb any sudden increases of the volume-based floor.

The idea is to render the floor's value smooth on the rise (linear in time) by imposing a certain increase rate.

Here is the graph for both floors for the Pudgy Penguins collection:

And here is an example with real data, augmented with several hundred concentrated fake trades (as if issued by a malicious operator) at 2PM February 6th: