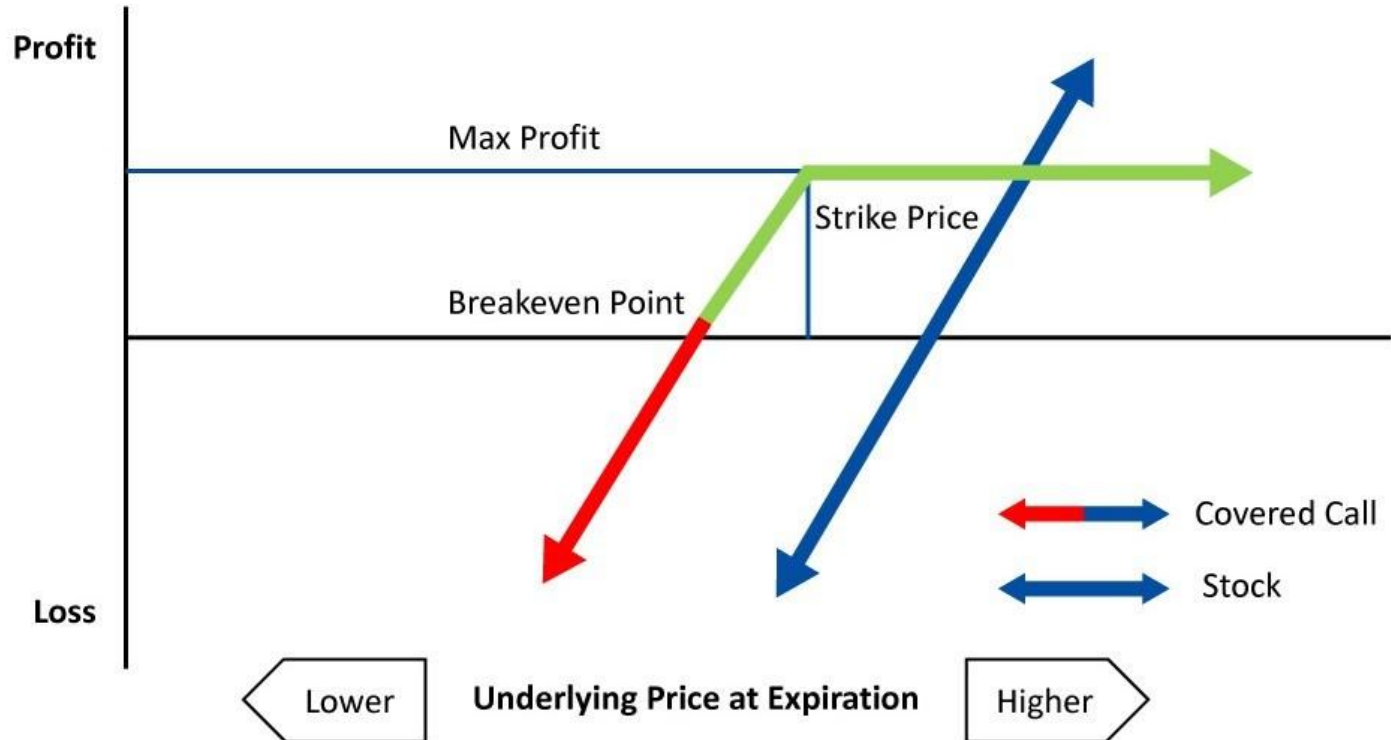# High yield
Structured product

Covered call payoff

Two obvious strategies

- Low frequency one : triggered by a liquidity need and the will not to sell your BTCs : you sell covered calls in the money with a long duration (> 6months) and you get an immediate huge premium (around 50% of notional) but you have sold the upside of your BTCs, but at least you keep them if the price is under K at expiry
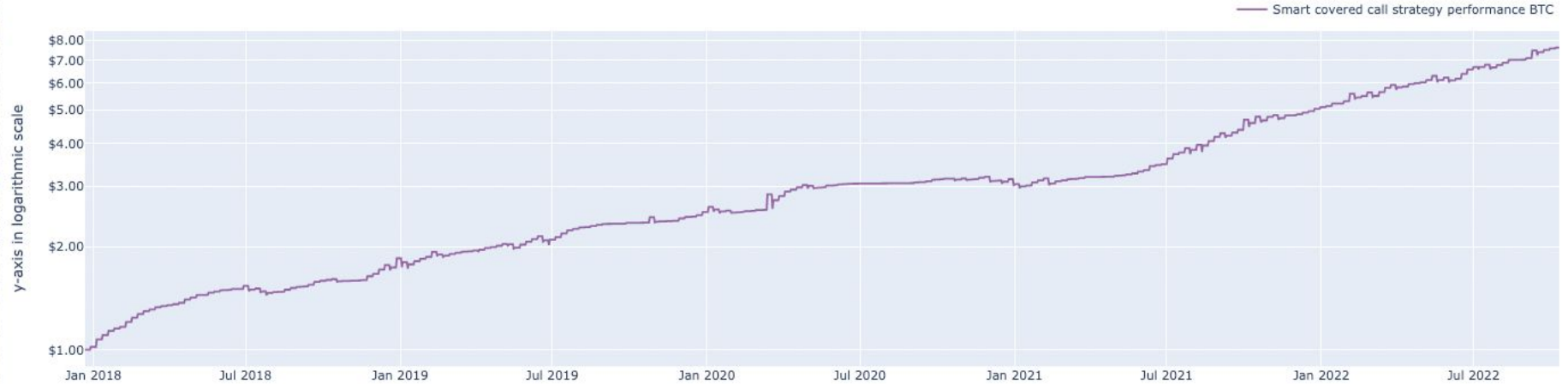
  => high yield structured products

- Middle frequency one : you roll call options on a weekly basis with a strike very unlikely to be hit (cumulated with a stop loss) and you compound the premium.
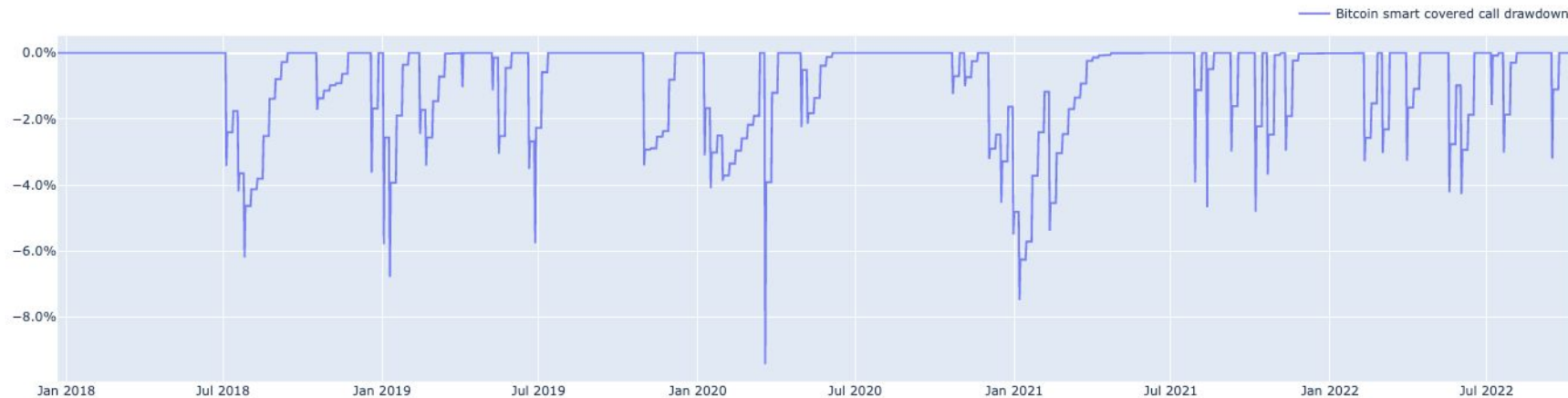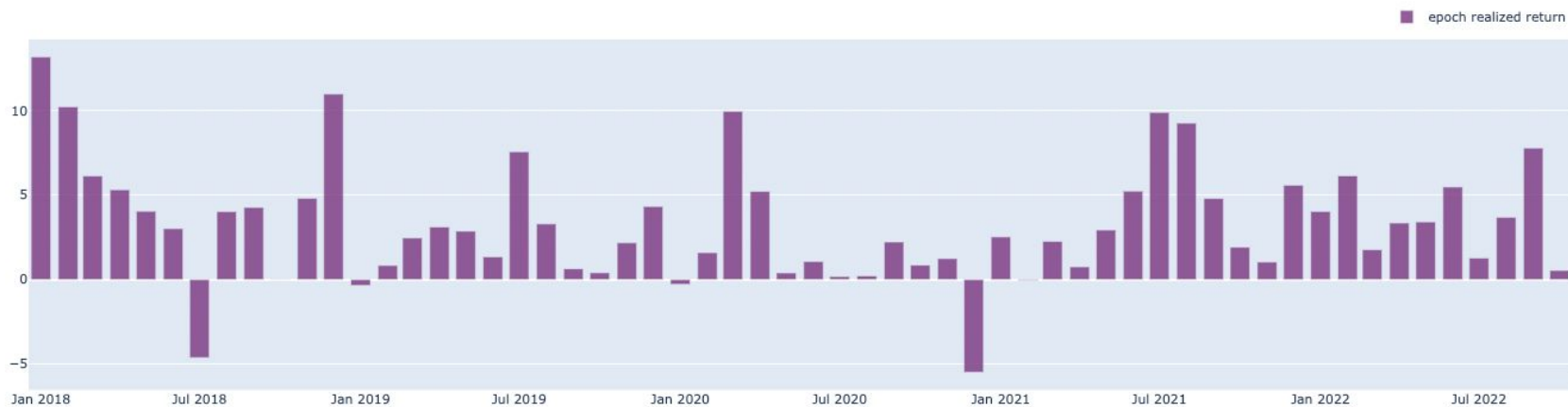
  https://drive.google.com/drive/folders/1qSZWZfwKYgCgIarHpHl9DXVQiwR2g9DP

Weekly rolling covered call strategy

Strategy absolute performance

Drawdown chart

epoch realized return in percent (epoch frequency monthly)

epoch realized return

cumulated gain vs losses _BTC

Legend: cumulative_premium_BTC, cumulative_incurred_loss_BTC

smart strike price from the spot in %

Legend: rolling_historical_gain_BTC
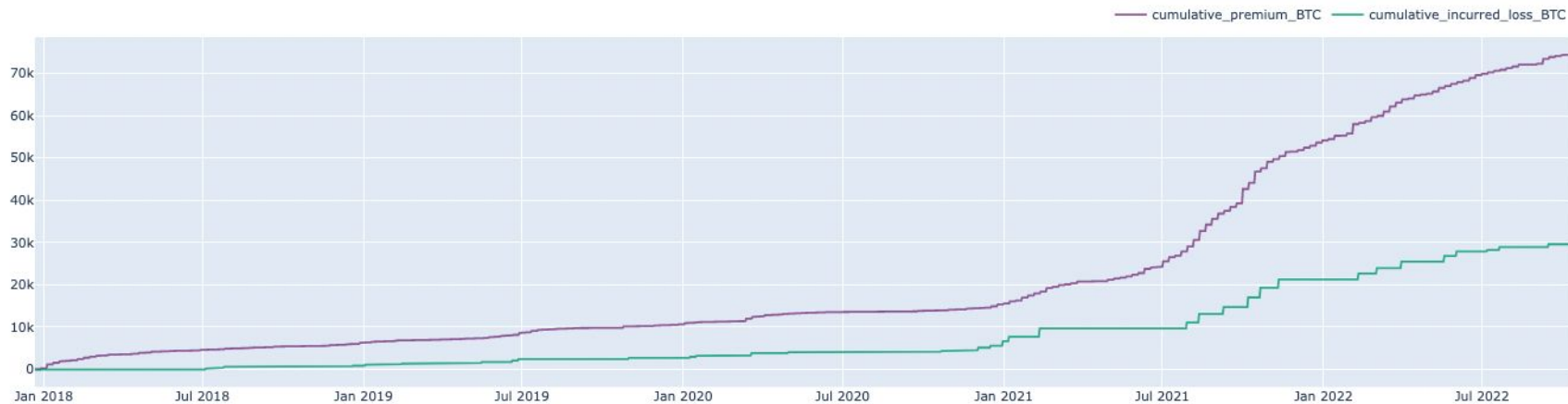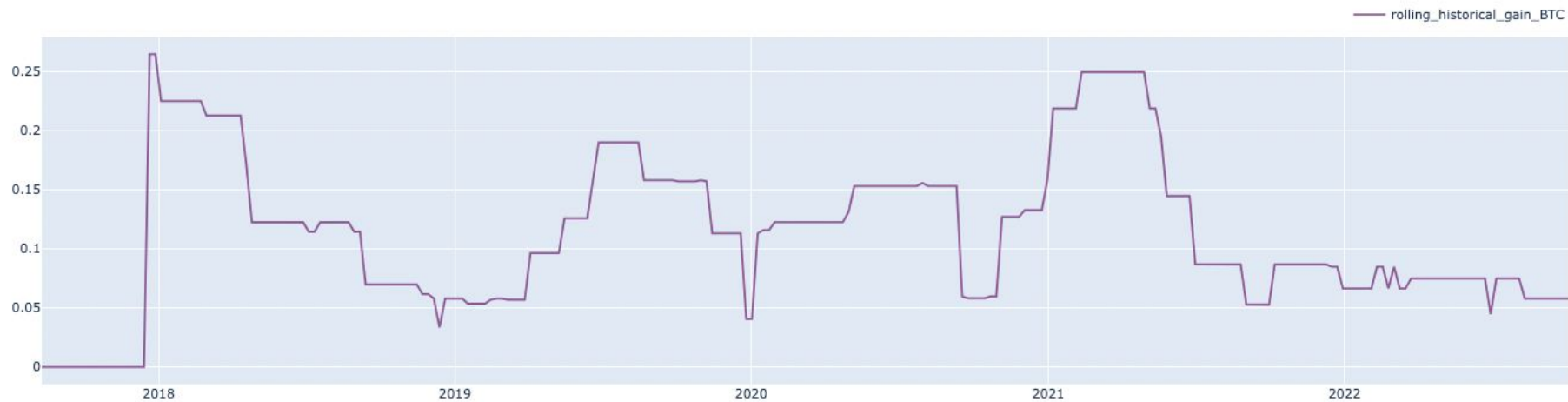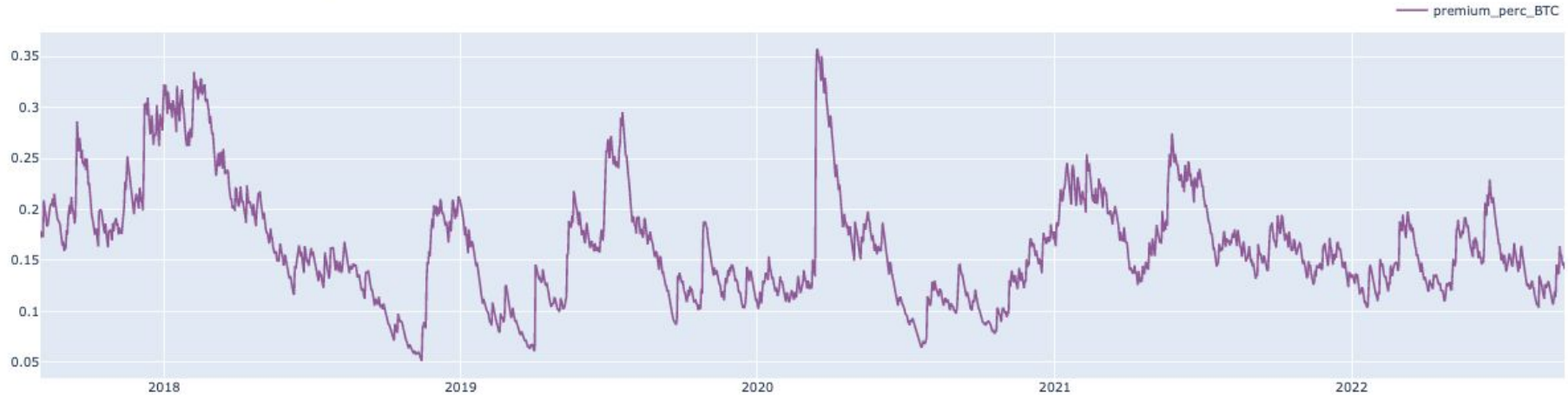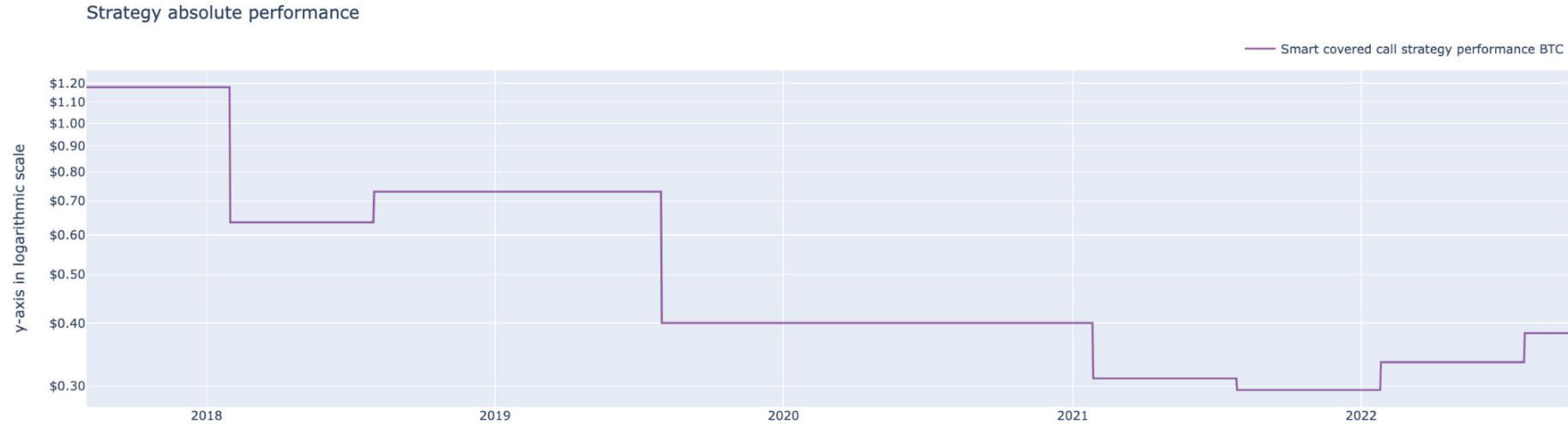
Structured Products/low frequency : huge time to maturity : big premium

Premium as notional percentage over time at the money 6 months duration

Systematic rolling covered call at the money 6 months: losing money

Strategy absolute performance

— Smart covered call strategy performance BTC

Making sure you earn at least R =15% on your BTC

- Compute the maturity T such that premium $P(S_0, T)$ in the money (strike S_0) is such $S_0 + P(S_0, T) = S_0 * (1 + R)$

  => sell the call option at Toptim : you guarantee the yield but you cap your gain at S_0

- We can adjust the strike price to allow a bullishness flavour : $S_1 = S_0 * (1 + B)$, B being the bullishness flavour.
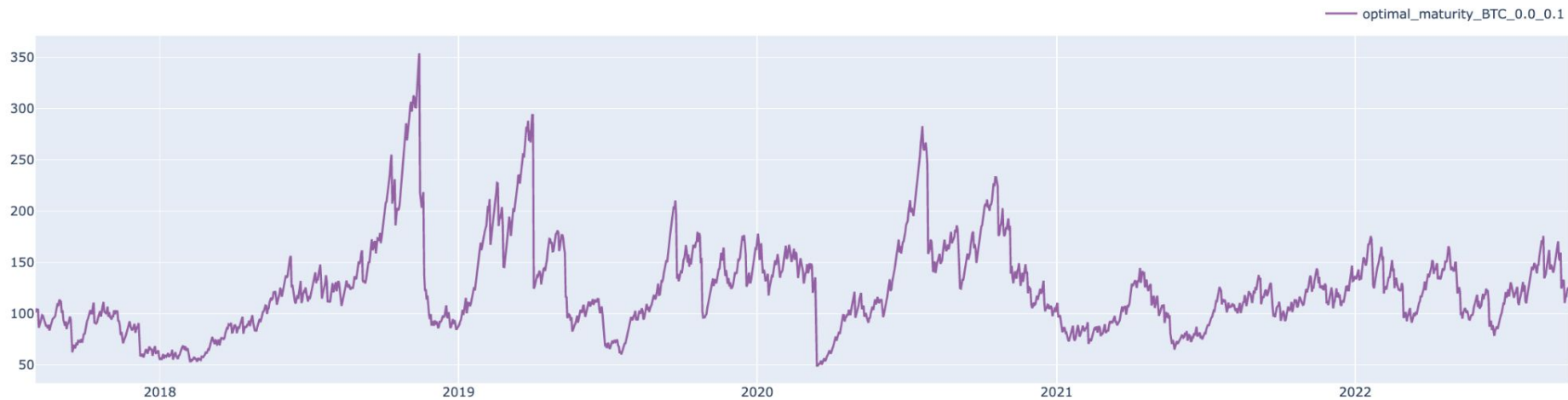
  => Compute the maturity T such that premium $P(S_1, T)$ slightly above the money (strike S_1) is such $S_0 + P(S_1, T) = S_0 * (1 + R)$

Making sure you earn at least R% on your BTC (upside totally capped B=0)

Optimal Maturity
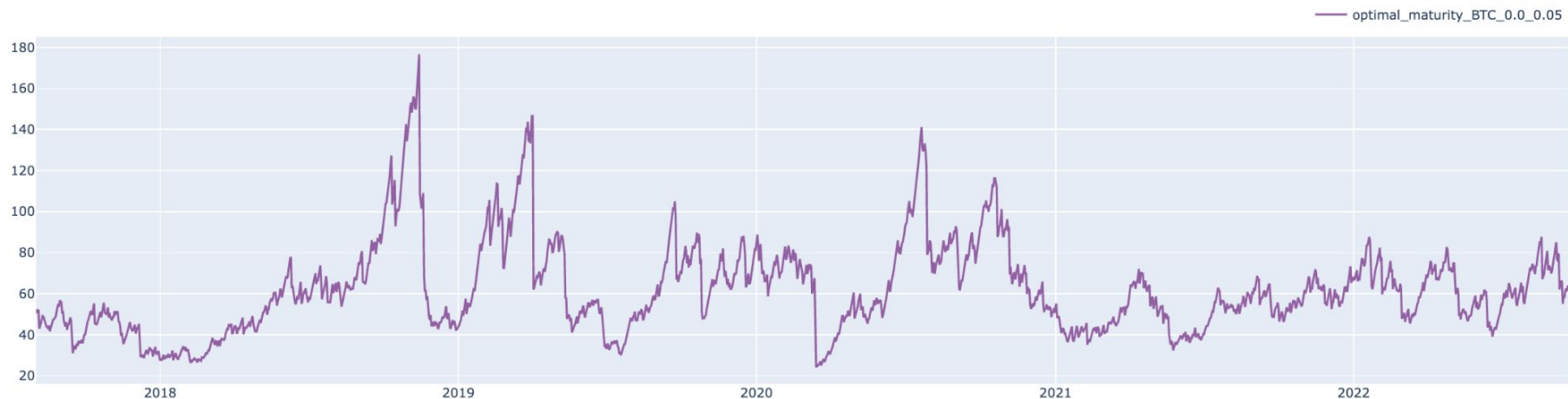
Optimal Maturity

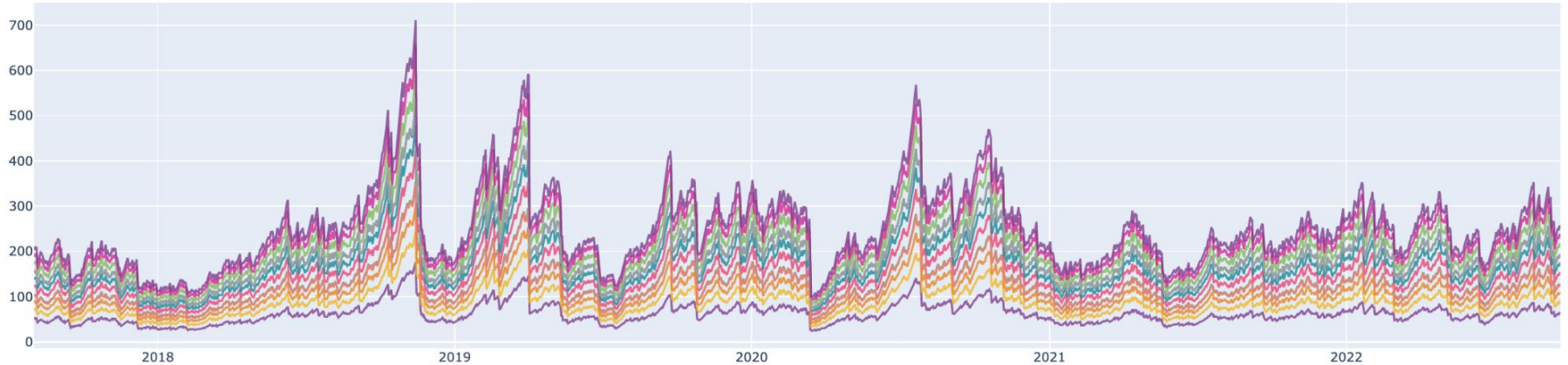# Making sure you earn at least R% on your BTC (upside capped at B=5%)

Optimal Maturity

Optimal Maturity

optimal_maturity_BTC_0.05_0.1

Optimal Maturity
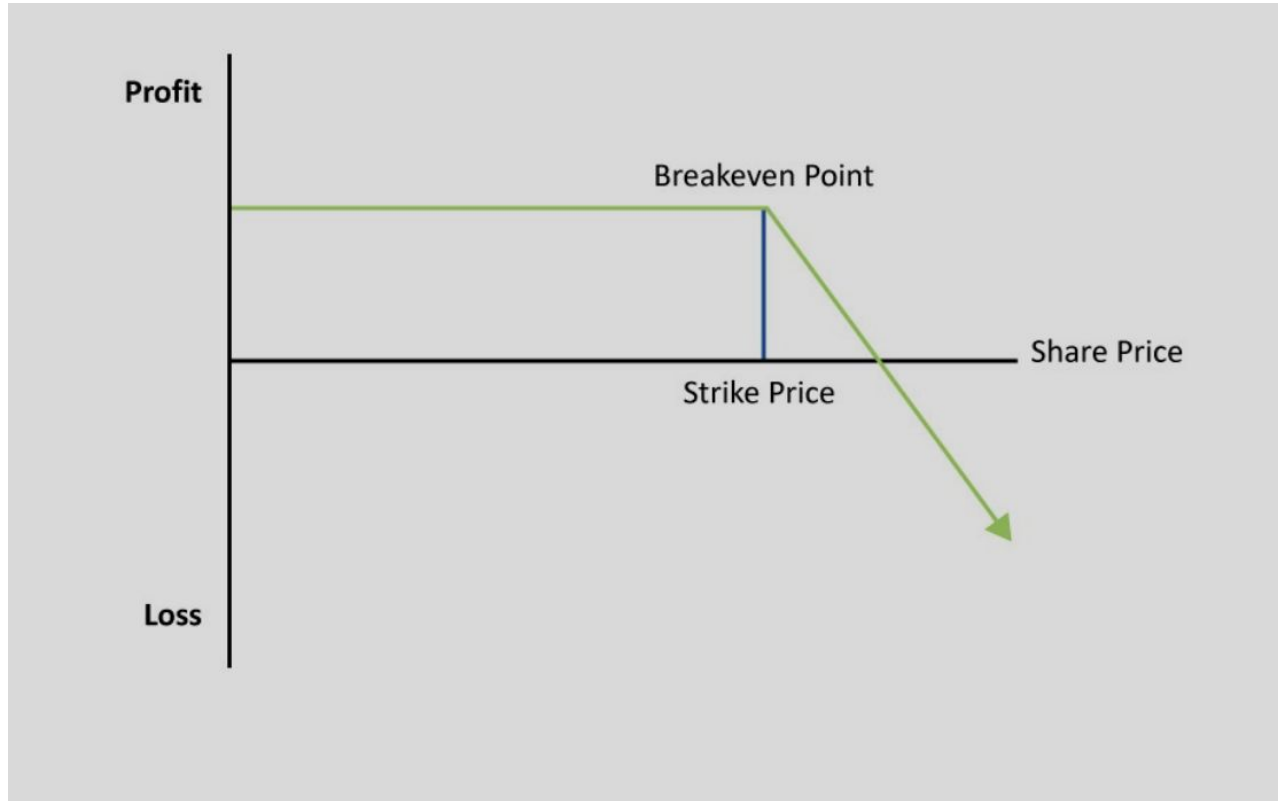

optimal_maturity_BTC_0.05_0.15

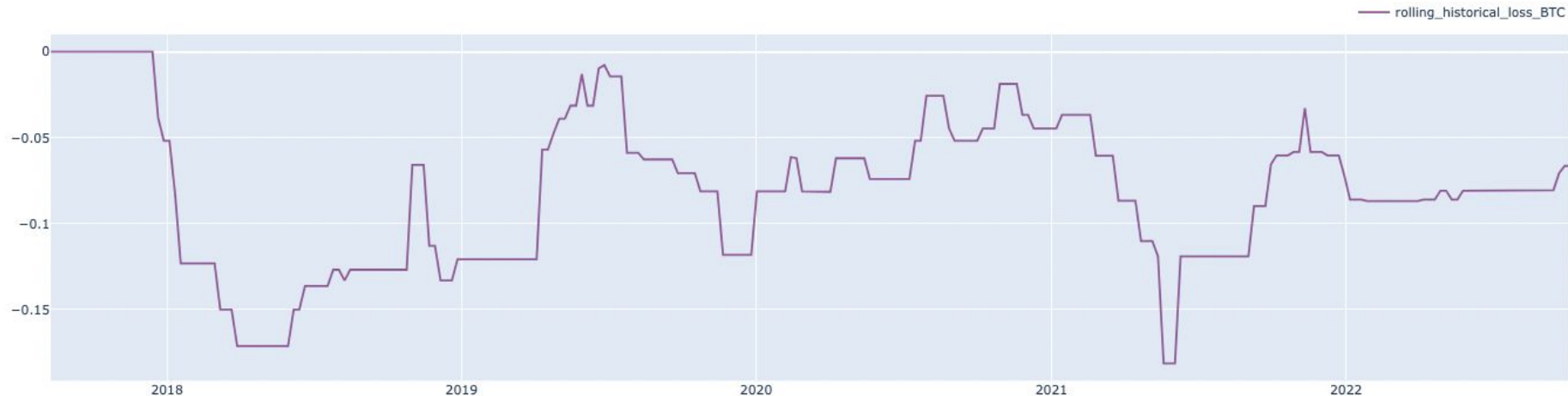# Optimal maturity

Strategy

- Same study must be done but with market call prices for a more accurate backtest

Put selling

Weekly rolling smart put selling

smart strike price from the spot in %

Weekly rolling smart put selling

Strategy absolute performance

Smart put selling strategy performance BTC

Weekly rolling smart put selling

Mix covered call/put selling (strategy combo ½-½)

call/put strike price BTC

day_before_put_strike_price_set_BTC   day_before_call_strike_price_set_BTC

smart strike price from the spot in %

rolling_historical_loss_BTC   rolling_historical_gain_BTC
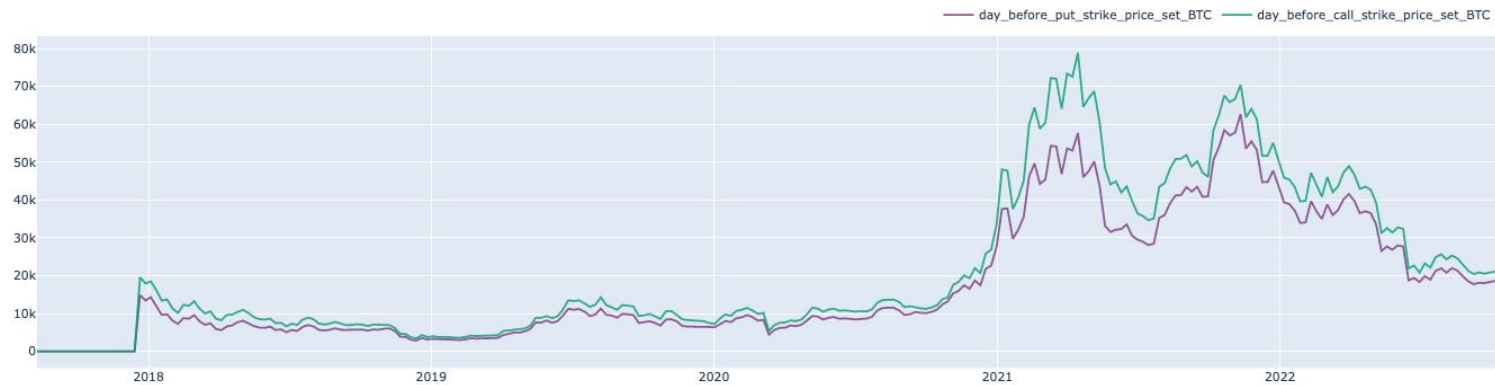
Drawdown chart
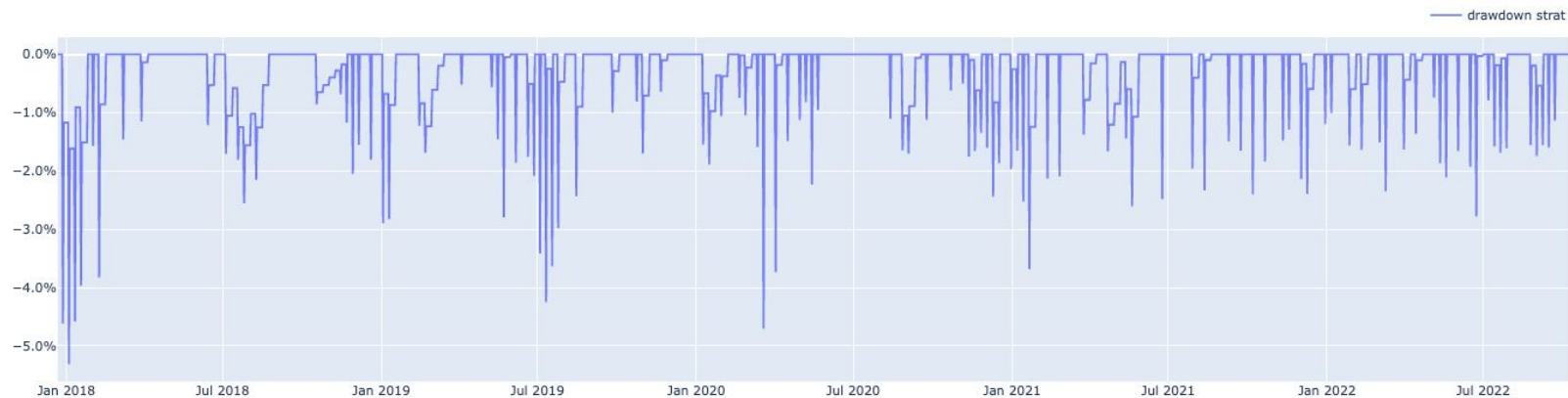
Strategy CALL_PUT_RANGY)

epoch realized return in percent

epoch realized max drawdown in percent

Sensitivity analysis

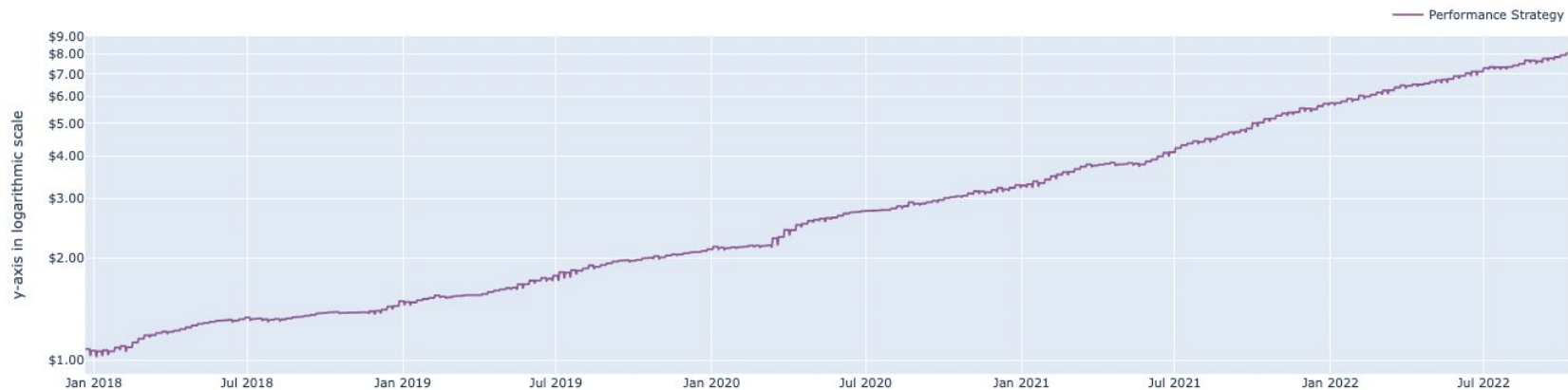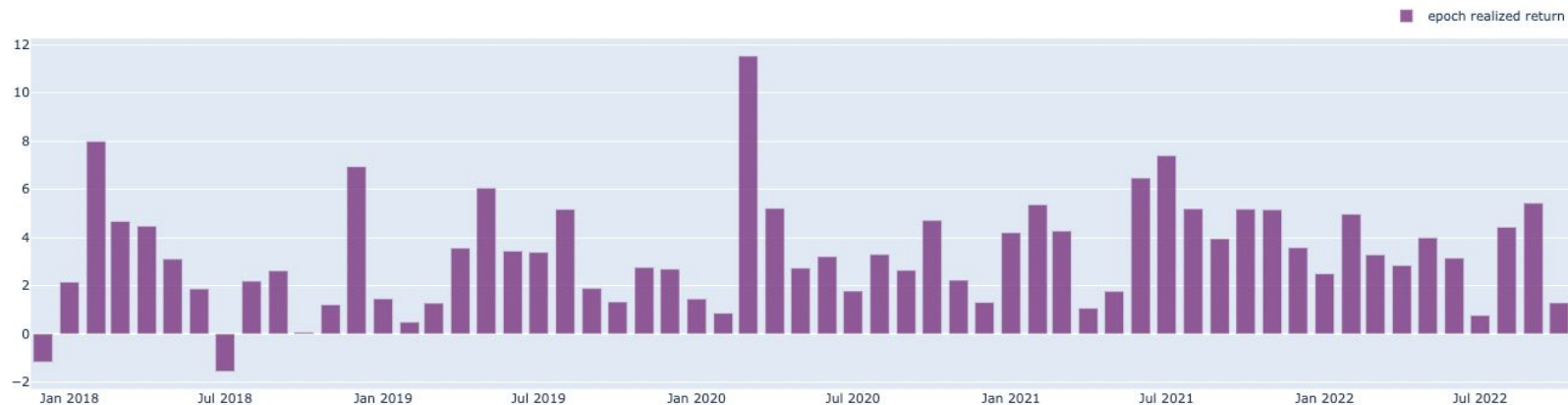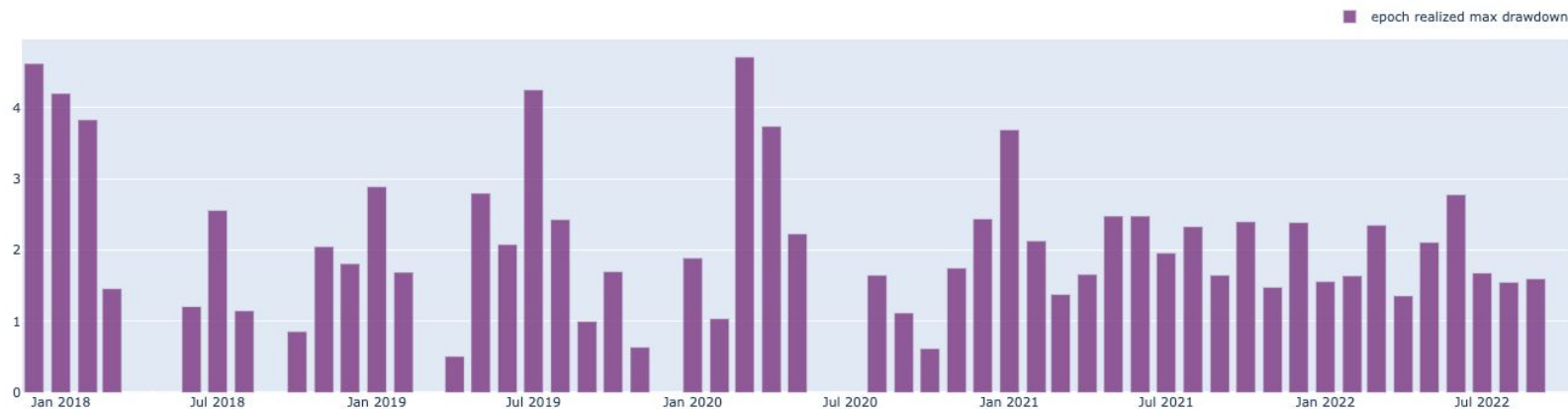| alpha	rolling_weeks_window	number_of_week_frequency	cutoff	annual_return	sharpe	calmar
0.15000	20	1	False	0.51943	3.13850	9.77029
0.15000	15	1	False	0.46315	2.88273	8.71170
0.15000	25	1	False	0.40033	2.84998	8.50148
0.00100	5	1	False	0.49103	2.65819	7.32592
0.01000	5	1	False	0.49103	2.65819	7.32592
0.15000	5	1	False	0.49103	2.65819	7.32592
0.10000	5	1	False	0.49103	2.65819	7.32592
0.05000	5	1	False	0.49103	2.65819	7.32592
0.03000	5	1	False	0.49103	2.65819	7.32592
0.02000	5	1	False	0.49103	2.65819	7.32592
0.04000	5	1	False	0.49103	2.65819	7.32592
0.10000	20	1	False	0.32376	2.48261	6.08977
0.10000	25	1	False	0.24109	2.23063	5.08008
0.10000	10	1	False	0.23398	1.84415	2.40569
0.15000	10	1	False	0.23398	1.84415	2.40569
0.04000	10	1	False	0.23398	1.84415	2.40569
0.03000	10	1	False	0.23398	1.84415	2.40569
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0.05000	10	1	False	0.23398	1.84415	2.40569
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0.00100	25	9	False	0.00000	1.65720	0.00057
0.03000	25	9	False	0.00000	1.65720	0.00057
0.04000	25	9	False	0.00000	1.65720	0.00057
0.02000	25	9	False	0.00000	1.65720	0.00057
0.05000	25	9	False	0.00000	1.65720	0.00057
0.00100	15	1	False	0.14801	1.57643	1.87810
0.02000	15	1	False	0.14801	1.57643	1.87810
0.10000	15	1	False	0.14801	1.57643	1.87810
0.04000	15	1	False	0.14801	1.57643	1.87810
0.03000	15	1	False	0.14801	1.57643	1.87810
0.05000	15	1	False	0.14801	1.57643	1.87810
0.01000	15	1	False	0.14801	1.57643	1.87810