PSEDYS | TECHNICAL REFERENCE MANUAL V3.0

OI — Open Interest

OI — Open Interest

Technical Reference Manual v1.0

PSEDYS | Complete Edition
Open Contracts · OI + Price Matrix · Long/Short Squeeze · OI Spike · Funding + OI Combined · MTF · PSEDYS

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1. What is Open Interest? Concept

Open Interest (OI) represents the **total number of open futures/perp contracts** at a given time — contracts that have not been closed, expired, or liquidated. Each contract has a Long side and a Short side.

OI ≠ Volume: Volume = number of contracts traded in a period. OI = stock of active contracts.

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2. How to Calculate OI

```
OI increases by +1 contract when:
  Buyer opens NEW Long + Seller opens NEW Short
  (both positions are new)

OI remains constant when:
  NEW Buyer takes from Seller who CLOSES
  (one new position + one closed → net zero)

OI decreases by -1 contract when:
  Existing Long CLOSES + Existing Short CLOSES
  (both liquidate each other)
```

3. Price + OI Matrix — All Combinations

```
Price ↑ + OI ↑ = STRONG BULLISH TREND
  → New money enters (new longs and shorts), but bulls dominate
  → Signal: continuation of bullish trend

Price ↑ + OI ↓ = SHORT COVERING (squeeze)
  → Shorts are closing (covering), no new money
  → Signal: weaker bullish move, possibly temporary

Price ↓ + OI ↑ = STRONG BEARISH TREND
  → New money enters (shorts dominate)
  → Signal: continuation of bearish trend

Price ↓ + OI ↓ = LONG LIQUIDATION / PROFIT TAKING
  → Longs are closing (stop hit or profit)
  → Signal: weaker bearish move, possibly temporary

OI ↑ + Lateral Price = ACCUMULATION / DISTRIBUTION
  → Open positions without price movement
  → May precede a large move
```

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4. OI Spike and Significance

```
OI spike (+20%+ rapid):
  + Bullish Price: massive Long entry → bullish confirmed or overfunded (squeeze risk)
  + Bearish Price: massive Short entry → bearish confirmed or short squeeze risk
  + Lateral Price: large positions built → imminent explosion

Massive OI drop (-20%+ rapid):
  + Bearish Price: Long liquidation cascade (long squeeze)
  + Bullish Price: Short liquidation cascade (short squeeze)

Liquidation Cascade:
  Long Squeeze: OI ↓ + Price ↓↓↓ rapid = long liquidations cascade
  Short Squeeze: OI ↓ + Price ↑↑↑ rapid = short liquidations cascade
```

5. Trading Signals

```
Bullish Setup (Price ↑ + OI ↑):
  Sustained bullish trend supported by new money
  → Long entry on pullback (healthy retracement)
  → SL below last major support

Bearish Setup — Short Squeeze Warning:
  High OI + Extremely negative Funding + Price at support
  → Imminent short squeeze if price breaks resistance
  → Anticipated Short exit or no Short entry

Long Squeeze Setup:
  High OI + Extremely positive Funding + Price at resistance
  → Imminent long squeeze
  → Anticipated Long exit or no Long entry at resistance
```

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6. OI + Funding Rate (Combined)

```
High OI + Extremely positive FR (> 0.05%/8h):
  Too many longs → high holding cost → longs forced to exit
  → Bearish bias (long squeeze risk)

High OI + Extremely negative FR (< -0.05%/8h):
  Too many shorts → high holding cost for shorts
  → Bullish bias (short squeeze risk)

Decreasing OI + Neutral FR:
  Openings are closing, market "cleans up"
  → Large move follows (direction unclear)

Increasing OI + Neutral FR:
  New positions in both directions
  → Market builds up for a move
```

7. OI in Crypto Futures

```
Where to check OI:
  - Direct exchange (Binance, Bybit, Bitget perpetuals)
  - Coinglass.com (aggregated OI cross-exchange)
  - PSEDYS TI DB: open_interest table

Useful Metrics:
  OI in USD (contract value): more comparable cross-exchange
  OI in number of contracts: specific per exchange

Exchanges in PSEDYS TI:
  bitget, bybit, kucoin, mexc (binance offline)
  → table: open_interest (exchange, symbol, open_interest, timestamp)
```

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8. MTF and PSEDYS (TI DB)

```
-- Current OI per symbol on Bitget
SELECT symbol, open_interest, timestamp
FROM open_interest
WHERE exchange = 'bitget'
ORDER BY timestamp DESC
LIMIT 20;

-- OI change in the last 4H
SELECT symbol,
       last_oi - prev_oi AS oi_change,
       (last_oi - prev_oi) / prev_oi * 100 AS oi_change_pct
FROM (
  SELECT symbol,
         first_value(open_interest) OVER (PARTITION BY symbol ORDER BY timestamp DESC) AS last_oi
         nth_value(open_interest, 10) OVER (PARTITION BY symbol ORDER BY timestamp DESC) AS prev_
  FROM open_interest
  WHERE exchange = 'bitget'
    AND timestamp > NOW() - INTERVAL '4 hours'
) sub
WHERE prev_oi IS NOT NULL
ORDER BY oi_change_pct DESC;
```

```
# OI trend filter
def oi_trend_filter(oi_current, oi_4h_ago, price_current, price_4h_ago):
    oi_change = (oi_current - oi_4h_ago) / oi_4h_ago
    price_change = (price_current - price_4h_ago) / price_4h_ago
    if price_change > 0 and oi_change > 0:
        return 'STRONG_BULL'
    elif price_change > 0 and oi_change < 0:
        return 'SHORT_COVERING'
    elif price_change < 0 and oi_change > 0:
        return 'STRONG_BEAR'
    else:
        return 'LONG_LIQUIDATION'
```

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9. Practical Exercises

Exercise 1: BTC Price ↑ 8% with OI ↑ 15%

Situation: BTC rises 8% in 24h. OI increases 15%. Funding = +0.02%/8h (normal-slightly positive).

Answer: Strong bullish trend — Valid Long. Price ↑ + OI ↑ = new money entering long. Normal funding = not overheated. Ideal setup for Long on pullback. SL below last support + ATR. Watch funding if it reaches > 0.05% = squeeze risk.

Exercise 2: ETH OI ↑ 25% with Stagnant Price + FR = −0.04%

Situation: ETH OI increased 25% in 12h. Price stagnant (±1%). Funding = −0.04%/8h.

Answer: Potential Short Squeeze — no short. Massive OI increase = new short positions built (negative FR = shorts dominate). Stagnant price = price not dropping despite massive shorts = bullish absorption. FR at −0.04% = shorts paying a lot. If price breaks resistance → violent short squeeze (shorts forced to cover). No Short entry. Prepare Long on confirmed breakout.

10. Cheat Sheet

Concept	Rule
OI	Total number of open contracts (Long = Short in number)
OI ↑	New money entering the market
OI ↓	Positions closing (profit, SL, liq)
Price ↑ + OI ↑	Strong bullish trend
Price ↑ + OI ↓	Short covering (weaker)
Price ↓ + OI ↑	Strong bearish trend
Price ↓ + OI ↓	Long liquidation (weaker)
OI spike + Positive FR	Long Squeeze Risk
OI spike + Negative FR	Short Squeeze Risk
Long Squeeze	OI ↓ + Price ↓↓ rapid = liq cascade
Short Squeeze	OI ↓ + Price ↑↑ rapid = liq cascade
PSEDYS	`open_interest` table in TI DB
Cross-exchange	Coinglass for aggregated view

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