Algorithm 1: sliding window extremum

Data: sequence $X_1, ..., X_N$, sliding window length L
Result: local minimum m_1,...,m_N

Initialize local minimum double-ended queue Q;
for $i \leftarrow 1$ **to** N **do**
    if $Q \neq \emptyset$ *and* Q.`peekleft()` $\geq L$ **then**
        Q.`popleft()`
    while $Q \neq \emptyset$ *and* $X_{Q.\texttt{peekright()}}$ **do**
        Q.`popright()`
    end
    Q.`append(`i`)`;
    yield $m_i = X_{Q.\texttt{peekleft()}}$;
end