

| History of planar maximum flow and minimum cut via shortest ss | | | | |
|--|--------------------------------------|------------------|------------------|------------------------|
| year | problem | # SP calls | run time | reference |
| 1969 | min cut, directed <i>st</i> -planar | 1 | $\Theta(n)$ | Hu |
| 1979 | max flow, directed <i>st</i> -planar | 1 | $\Theta(n)$ | Itai and Shiloach |
| 1983 | max flow, directed | ϕ | $\Theta(n\phi)$ | Johnson and Venkatesan |
| 1983 | min cut, undirected | $\leq n$ | $O(n \log n)$ | Reif |
| 1985 | max flow, undirected | $\leq n$ | $O(n \log n)$ | Hassin and Johnson |
| 2011 | min cut, undirected | $\leq \phi$ | $O(n \log \phi)$ | Kaplan and Nussbaum |
| 2012 | max flow, directed | $\leq 2\phi + 2$ | $O(n\phi)$ | [this paper, appendix] |
| 2012 | max flow, directed | 3 | $\Theta(n\phi)$ | [this paper] |