

| <i>Topic</i>                   | <i>Algorithm</i>         | <i>Work</i> | <i>Time</i> | <i>Notes</i>   |
|--------------------------------|--------------------------|-------------|-------------|--|
| <b>Euler Tours</b>             | Basic algo               |             |             |  |
|                                | applications             |             |             |  |
|                                | postorder num            | n           | logn        | EREW   |
|                                | set levels               | n           | logn        | EREW   |
|                                | num desc                 | n           | logn        | EREW   |
| <b>Tree contraction</b>        |                          |             |             |  |
|                                | Rake oper.               |             | 1           | 1 EREW   |
|                                | Contraction              | n           | logn        | EREW<br>Proof 2 concurrent rakes<br>do not interfere |
|                                | Expression<br>evaluation | n           | logn        | EREW using contraction                               |
| <b>Range minima</b>            | Basic solution           | nlogn       | logn        | CREW<br>How to make it EREW                          |
|                                | Optimal soln             | n           | logn        |  |
| <b>Nearest common ancestor</b> | Solution                 | n           | logn        | Uses Euler tour, range minima                        |
| <b>2-3 Tree insertion</b>      | Basic par algo           | kogn        | logk logn   |  |
|                                | Better algorithm         | klogn       | logk + logn | Introduces pipelining                                |