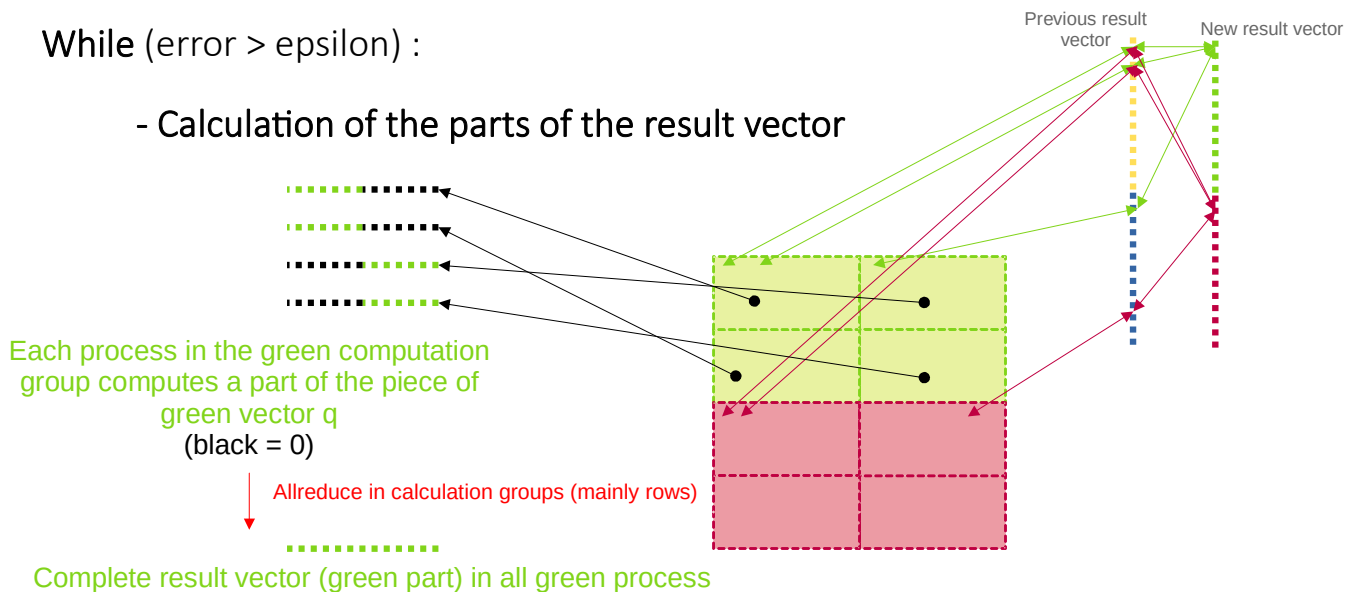


# Summary of the PageRank algorithm (performed with non-normalized $A^T$ )

## Step by step

While (error > epsilon) :

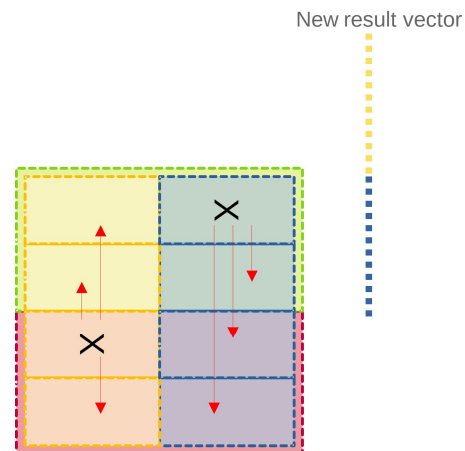
- Calculation of the parts of the result vector



- Communication of the new parts of result vector to the processes that need them (need groups), for the next iteration

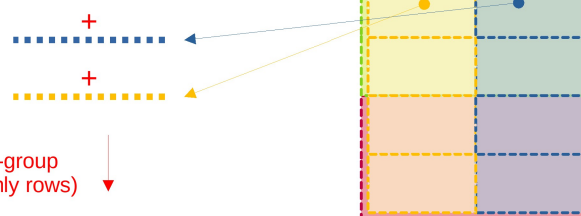
The "root" processes ("X") communicate their part of result vector to the others processes of the same column

Broadcast on the column blocks



- Normalization of the new result vector (need the total sum)

Local sum of the result vector elements



Total sum of the new result vector

Dividing each element of the new result vector by the total sum

- Calculation of the error (new vector - old vector)

Local sum of elements of new vector - old vector

Allreduce in groups of inter-group communication of need (mainly rows)

EndWhile

Error = total sum