

ALGORITHM (factorization Cholesky):

Date : $A = (a_{ij})_{i,j=1:n}$ SPD

$$L = 0 \in M_n(\mathbb{R})$$

$k=1, n$:

$$l_{kk} = \sqrt{a_{kk}}$$

$i=k+1, n$:

$$l_{ik} = a_{ik} / l_{kk}$$

end

$i=k+1, n$:

$j=k+1, n$:

$$a_{ij} = a_{ij} - l_{ik} l_{jk}$$

end

end

end

Output : $L = (l_{ij})_{i,j=1:n}$