$$= 1$$

donc :

$$(A_k^+ A_k)^t = \begin{pmatrix} A_{k-1}^+ A_{k-1}^t - A_{k-1}^+ a_k p_{k^+} A_{k-1})^t & A_{k-1}^+ a_k - A_{k-1}^+ a_k p_k^t a_k \\ 0 & 1 \end{pmatrix}$$

$$= \begin{pmatrix} A_{k-1}^+ A_{k-1} & 0 \\ 0 & 1 \end{pmatrix}$$

or $A_{k-1}^+ A_{k-1}$ symétrique, donc $= \begin{pmatrix} A_{k-1}^+ A_{k-1} & 0 \\ 0 & 1 \end{pmatrix}$ symétrique.

pour le cas particulier : $p_k = \frac{(A_{K-1}^+)^t A_{K-1}^+ a_K}{1+||(A_{K-1}^+) a_k||^2}$

$$p_k^t a_k = \frac{a_k^t (A_{K-1}^+)^t A_{K-1}^+ a_K}{(1 + ||(A_{K-1}^+) a_k||^2)}$$

$$= \frac{\| (A_{K-1}^+) a_k||^2}{(1 + ||(A_{K-1}^+) a_k||^2)}$$

$$p_k^t A_{k-1} = \frac{a_k^t (A_{K-1}^+)^t A_{K-1}^+ A_{k-1}}{(1 + \| (A_{K-1}^+) a_k \|^2)}$$

$$= \frac{(A_{k-1}^+ A_{k-1} A_{k-1}^+ a_k)^t}{(1 + \| (A_{K-1}^+) a_k \|^2)}$$

$$= \frac{(A_{k-1}^+ a_k)^t}{(1 + \| (A_{K-1}^+) a_k \|^2)}$$

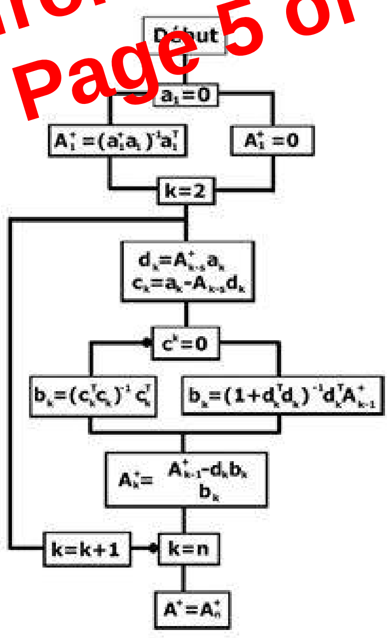

figure :L'organigramme de l'algorithme de Gréville