



Asignatura:

MÉTODOS COMPUTACIONALES - MÉTODOS NUMÉRICOS

-Trabajo Práctico N° 4-Método de Eliminación de Gauss

2023



Método de Eliminación de Gauss

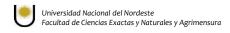


$$18,72 x + 8,2 y + 8,76 z = 121,280$$

 $6,4 x + 15,9 y + 7,18 z = 126,321$
 $5,22 x + 6,4 y + 14,31 z = 118,522$

$$\begin{bmatrix} \dot{a}_{11} = a_{11} & \dot{a}_{12} = a_{12} & \dot{a}_{13} = a_{13} & \dot{a}_{14} = a_{14} \\ \dot{a}_{21} = 0 & \dot{a}_{22} = a_{22} - \left(\frac{a_{21} * a_{12}}{a_{11}}\right) & \dot{a}_{23} = a_{23} - \left(\frac{a_{21} * a_{13}}{a_{11}}\right) & \dot{a}_{24} = a_{24} - \left(\frac{a_{21} * a_{14}}{a_{11}}\right) \\ \dot{a}_{31} = 0 & \dot{a}_{32} = a_{32} - \left(\frac{a_{31} * a_{12}}{a_{11}}\right) & \dot{a}_{33} = a_{33} - \left(\frac{a_{31} * a_{13}}{a_{11}}\right) & \dot{a}_{34} = a_{34} - \left(\frac{a_{31} * a_{14}}{a_{11}}\right) \end{bmatrix}$$

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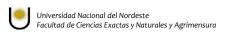
18,72x + 8,2y + 8,76z = 121,280 6,4x + 15,9y + 7,18z = 126,3215,22x + 6,4y + 14,31z = 118,522

Usando redondeo a 3 dígitos decimales

18,72 8,2 8,76 : 121,280 18,72 8,2 8,76 : 121,280 7,18 : 126,321 13,097 4,185 : 84,858 6,4 15,9 0 5,22 6,4 14,31 : 118,522 0 4,113 11,867 : 84,704

 $\sim \begin{vmatrix} 18,72 & 8,2 & 8,76 & : & 121,280 \\ 0 & 13,097 & 4,185 & : & 84,858 \\ 0 & 0 & 10,553 & : & 58,055 \end{vmatrix} = >$

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> 10,553 z = 58,055 = > z' = 5,501



- \Rightarrow 13,097 y + 4,185 * 5,501 = 84,858 => y' = 4,721
- Reemplazo x', y', z' en la ecuación original
- \rightarrow 18,72 * 1,836 + 8,2 * 4,721 + 8,76 * 5,501 = 121,271
- \rightarrow 6,4 * 1,836 + 15,9 * 4,721 + 7,18 * 5,501 = 126,311
- > 5,22 * 1,836 + 6,4 * 4,721 + 14,31 * 5,501 = 118,518

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