**Решение системы уравнений Ax=B**

$$A := \begin{pmatrix} 1.345 & 0.432 & -0.599 & 0.202 \\ 0.202 & 1.562 & 0.432 & -0.799 \\ -1.539 & 0.202 & 1.442 & 0.432 \\ 0.432 & -0.599 & 0.202 & 1.348 \end{pmatrix} \qquad B := \begin{pmatrix} 1.941 \\ -0.730 \\ -1.455 \\ 0.230 \end{pmatrix}$$

$$x = \begin{pmatrix} -4.939399 \\ 5.338183 \\ -8.652904 \\ 5.422313 \end{pmatrix}$$

$x := \text{lsolve}(A, B)$

**Метод простых итераций**

$m := 210$

$i := 0..m$

$y^{\langle 0 \rangle} := B$

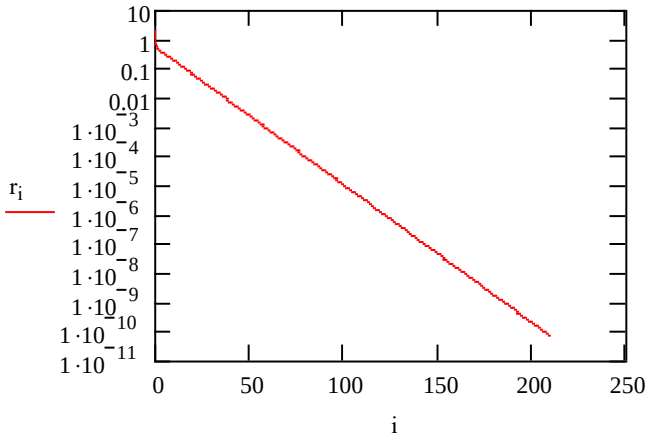
$\tau := 0.2$

$y^{\langle i+1 \rangle} := y^{\langle i \rangle} + \tau \cdot \left(B - A \cdot y^{\langle i \rangle}\right)$

$$y^{\langle m+1 \rangle} = \begin{pmatrix} 0.960119 \\ -0.349689 \\ 0.159448 \\ -0.316353 \end{pmatrix}$$

**Погрешность**

$r_i := \left| y^{\langle i \rangle} - x \right|$




**Условия сходимости**

$S := \text{identity}(4) - \tau \cdot A$

$\text{norm1}(S) = 1.021$ $\text{norm2}(S) = 0.926$ $\text{norme}(S) = 1.149$ $\text{normi}(S) = 1.183$

$$\text{eigenvals}(S) = \begin{pmatrix} 0.897 \\ 0.62 \\ 0.236 \\ 0.072 \end{pmatrix}$$