Numerieke technieken en optimalisatie

Jochen Schütz

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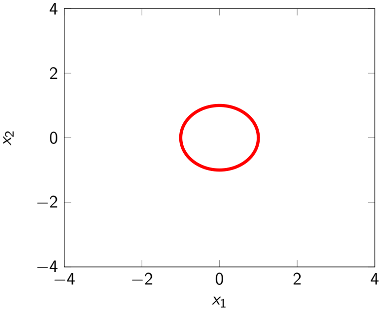
KNOWLEDGE IN ACTION

Matrix normen

$$\|A\|_2 := \sup_{\|x\|_2=1} \|Ax\|_2$$



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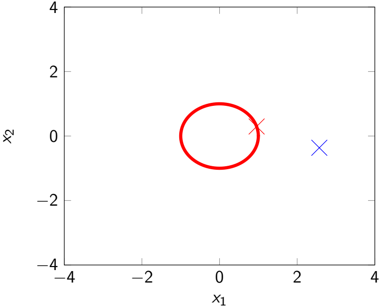

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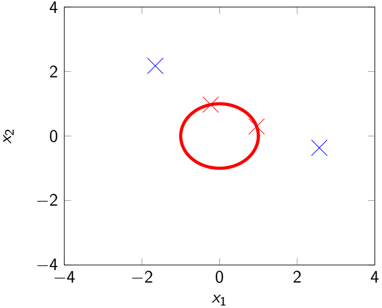

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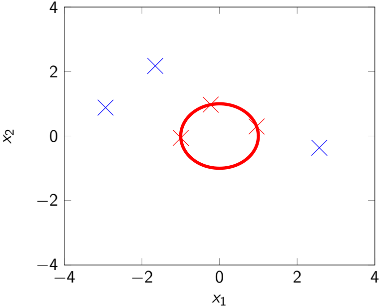

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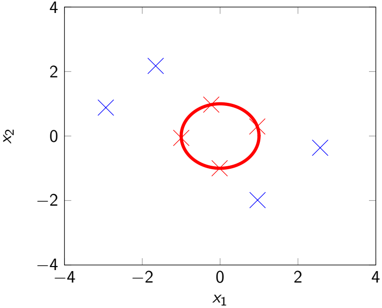

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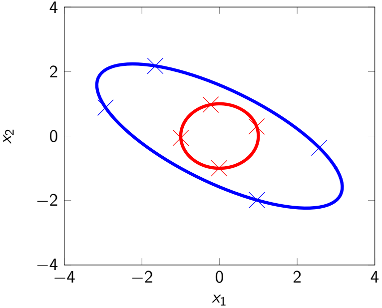

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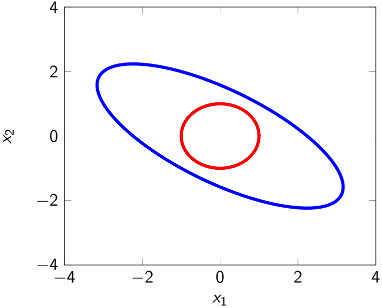

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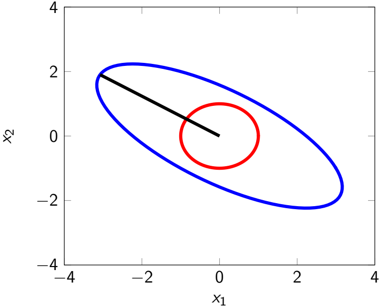

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Belangrijke matrix normen

$$\|A\|_\infty = \max_i \sum_{j=1}^{n} |a_{ij}|.$$

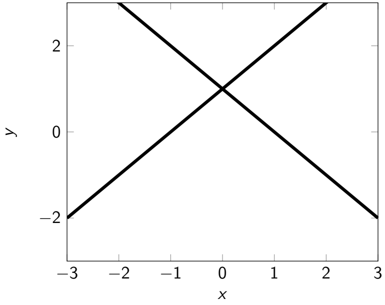
$$\|A\|_1 = \max_j \sum_{i=1}^{n} |a_{ij}|.$$

$$\|A\|_2 = \sqrt{\lambda_{max}(A^T A)}. \qquad \text{(spectraal norm)}$$

Conditie van een stelsel lineaire vergelijkingen

$$x + y = 1$$

$$-x + y = 1$$



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Conditie van een stelsel lineaire vergelijkingen

$$x + y = 1 \pm \varepsilon$$

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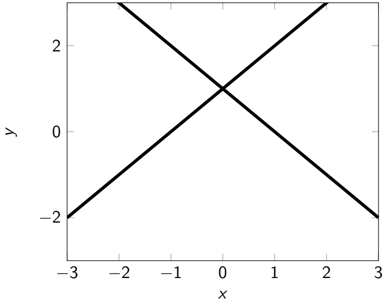

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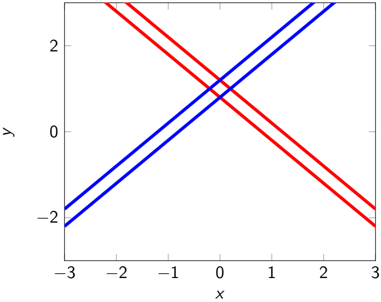

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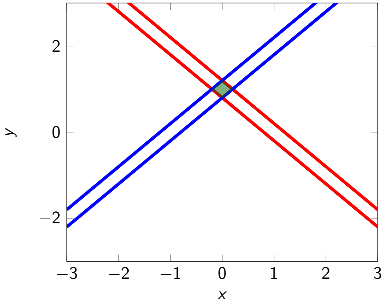
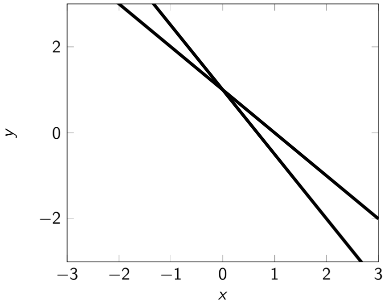


Conditie van een stelsel lineaire vergelijkingen

$$x + y = 1$$

$$\frac{3}{2}x + y = 1$$



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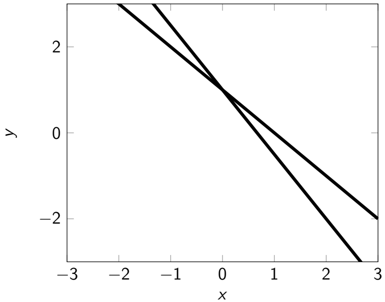

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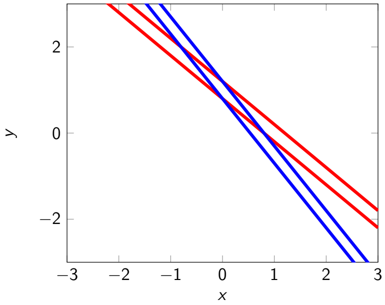

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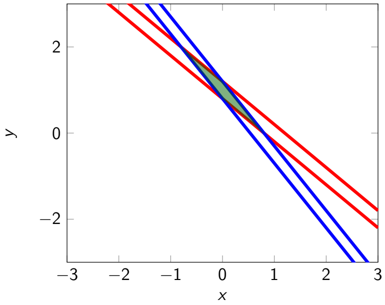

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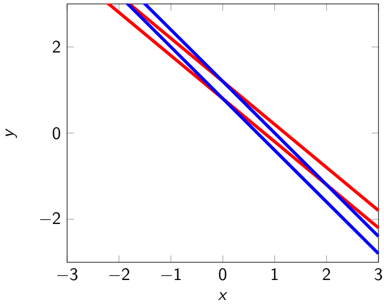
Conditie van een stelsel lineaire vergelijkingen

$$x + y = 1 \pm \varepsilon$$

$$\frac{6}{5}x + y = 1 \pm \varepsilon$$



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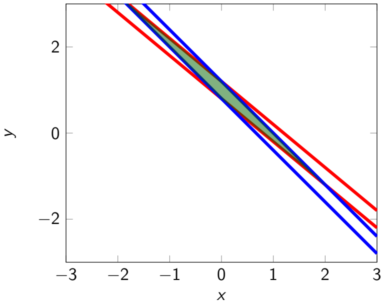
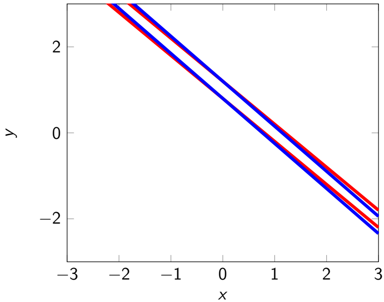


Conditie van een stelsel lineaire vergelijkingen

$$x + y = 1 \pm \varepsilon$$

$$\frac{22}{21}x + y = 1 \pm \varepsilon$$



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