

# Drawing Graphs

with

## Vertices at Specified Positions

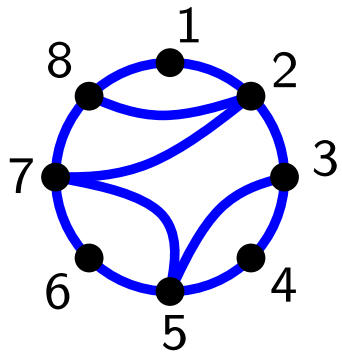
and

## Crossings at Large Angles

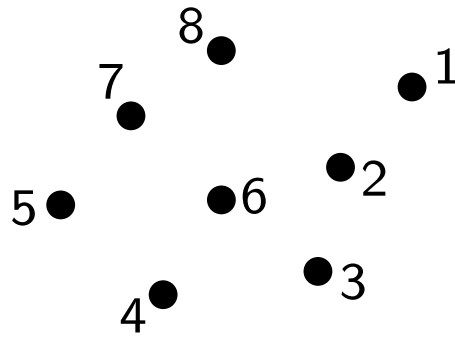
*Martin Fink*

Jan Haurert · Tamara Mchedlidze · Joachim Spoerhase · Alexander Wolff

# Point-Set Embeddability (PSE)

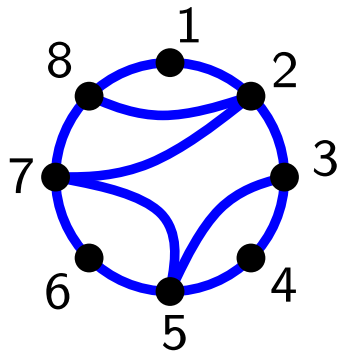


graph

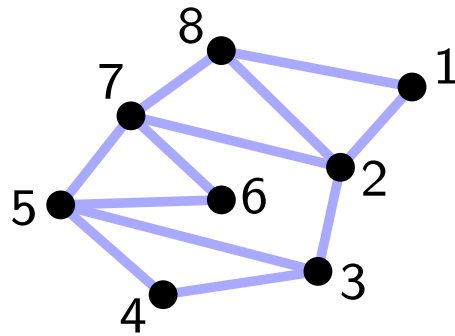


point set

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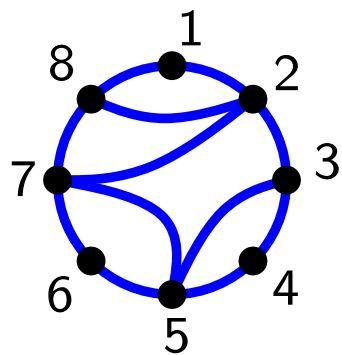


graph

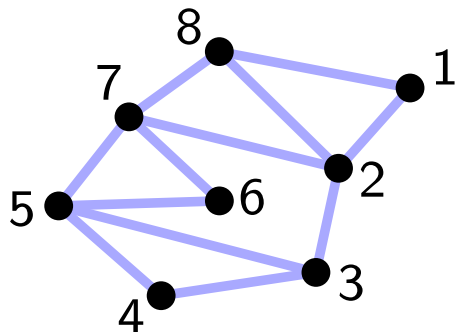


point set

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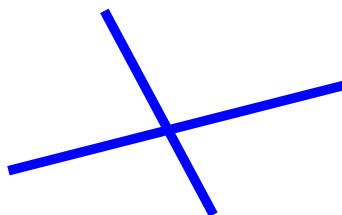


graph

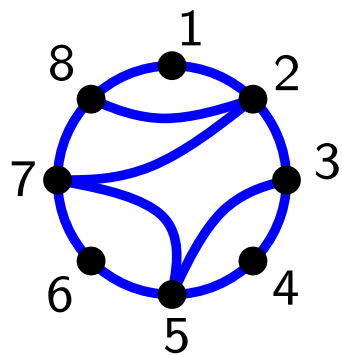


point set

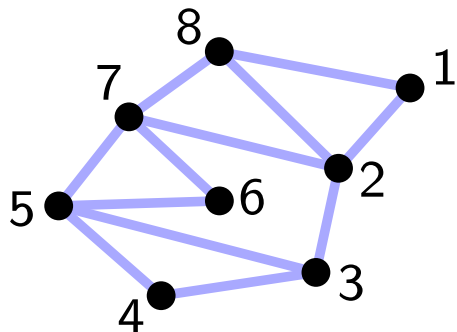
## Large Crossing Angles



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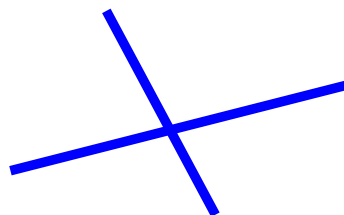
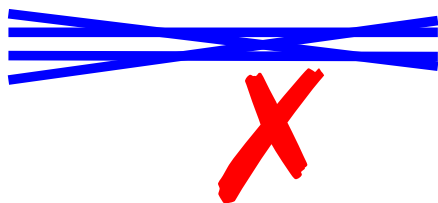


graph

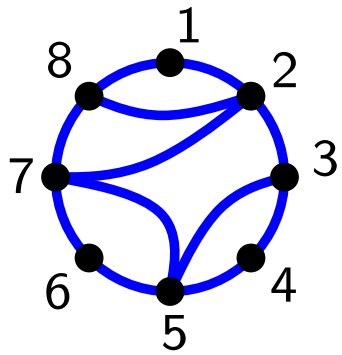


point set

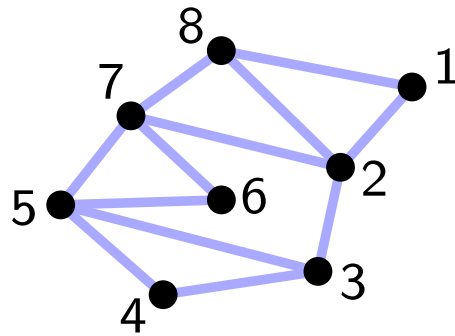
## Large Crossing Angles



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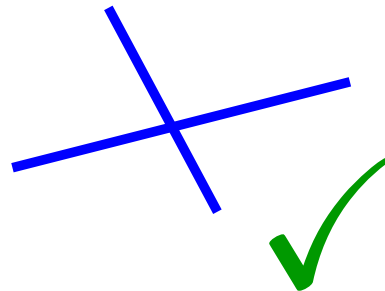
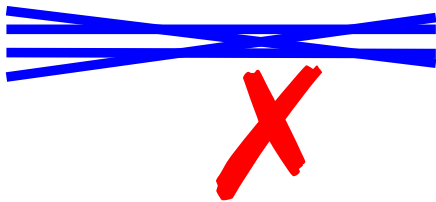


graph

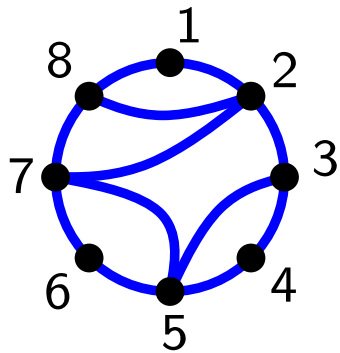


point set

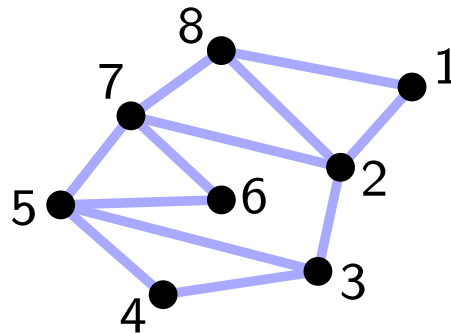
## Large Crossing Angles



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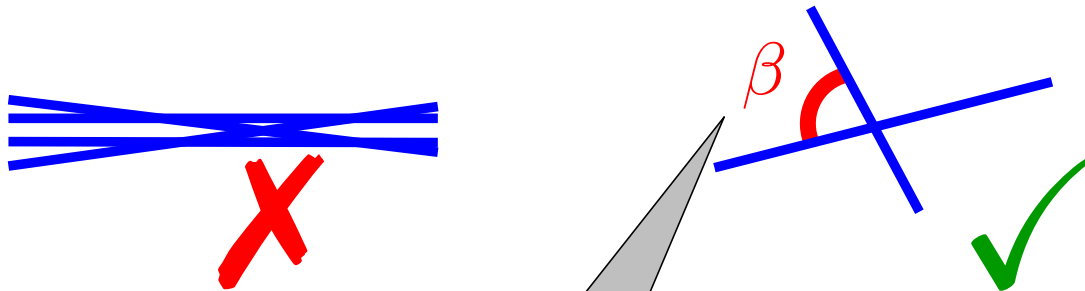


graph



point set

## Large Crossing Angles

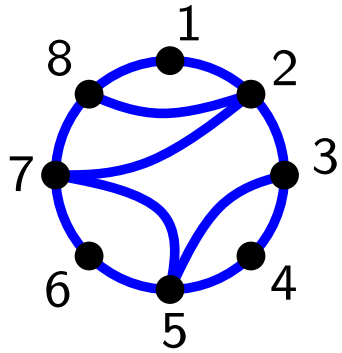


crossing angle  $\beta$ :

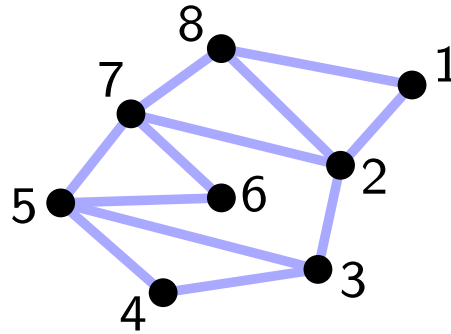
$\beta = 90^\circ$ : **RAC** drawing

$\beta \geq \alpha$ :  $\alpha$ AC drawing

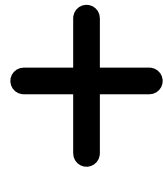
# Point-Set Embeddability (PSE)



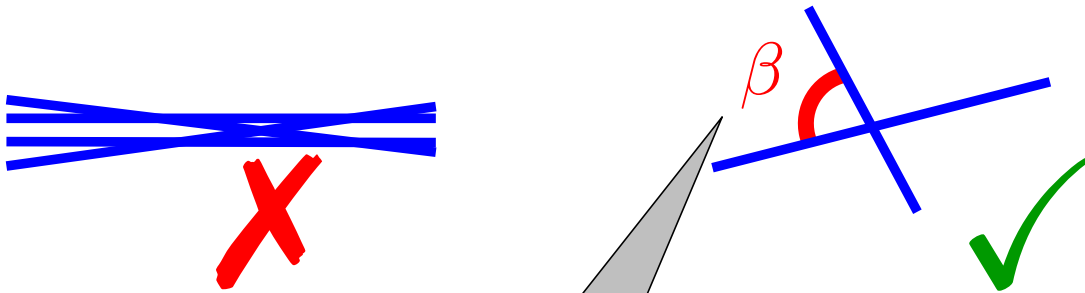
graph



point set



## Large Crossing Angles



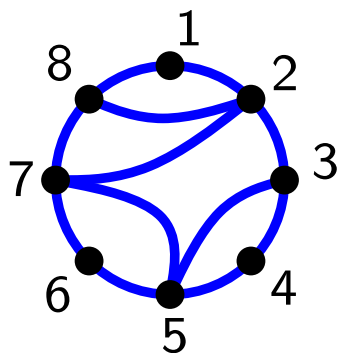
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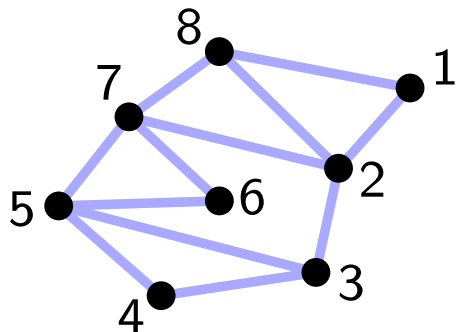
$\beta \geq \alpha$ :  $\alpha$ AC drawing



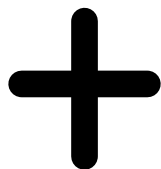
# Point-Set Embeddability (PSE)



graph



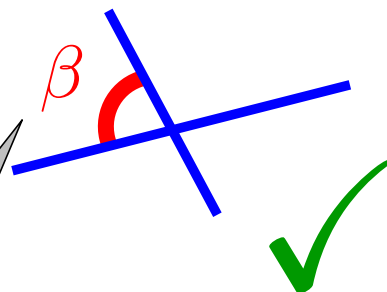
point set



**RAC PSE**

**$\alpha$ AC PSE**

## Large Crossing Angles



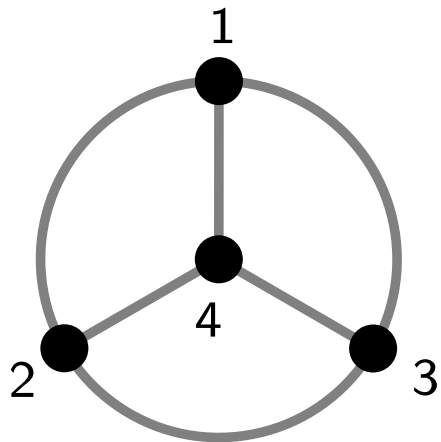
crossing angle  $\beta$ :

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# Restricted $RAC_2$ embeddings

- edges on grid lines
- $\leq 2$  bends per edge



maxdeg-2 graph

