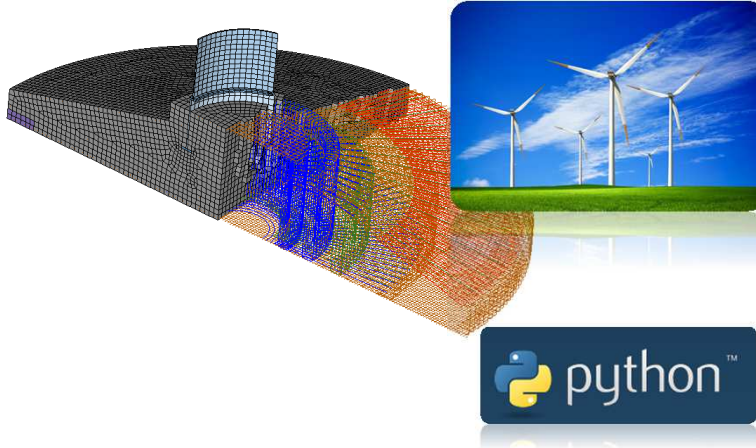


Parametrisch modelleren DIANA 10

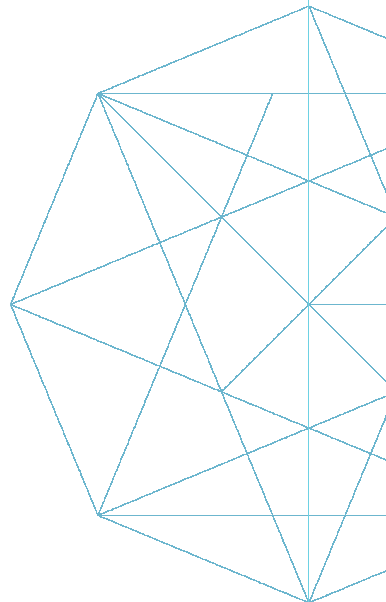


Ritchie Vink

07-06-2017

Inhoud

- Parametrisch modelleren
- Toepassing ABT
- Python programming language
- Nutteloos interactief voorbeeld



Parametrisch modelleren

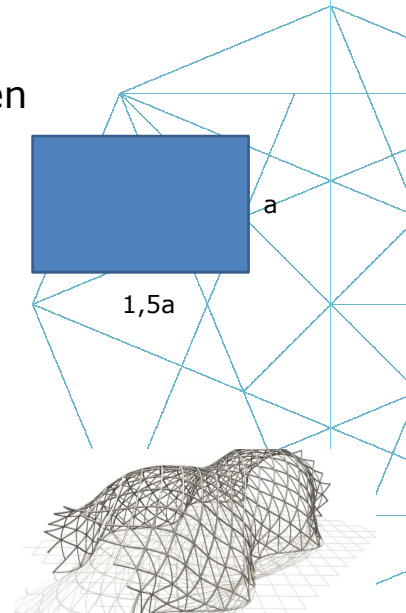
- Model abstraheren tot parameters
- DRY → Don't repeat yourself!

Voordelen

- Kostenbesparing
- Minder fouten
- Rekenkracht → dagen tot seconden
- Wiskundige geometrieën
- Leuker 😊

Nadelen

- Leercurve programmeren (voordeel?)



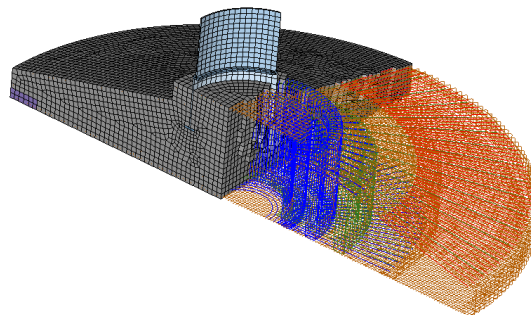
3

Toepassing ABT

Windturbinefundamenten

- Terugkerende opdrachten → Investering loont

Globaal model

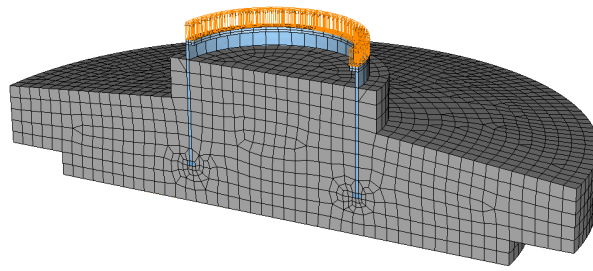


4

Toepassing ABT

Belastingen

- Horizontaal: F_{hd}
- Verticaal: F_{vd}
- Moment: M_d

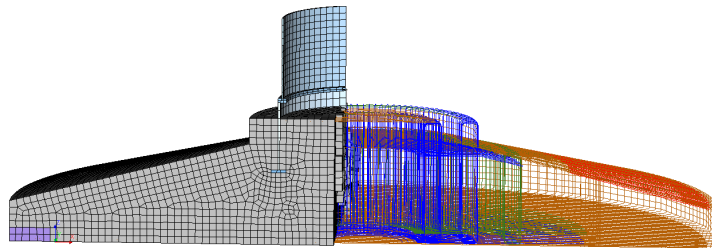


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Toepassing ABT

Wapening

- Embedded reinforcement
- Verankeringslengte gereduceerd



6

Toepassing ABT

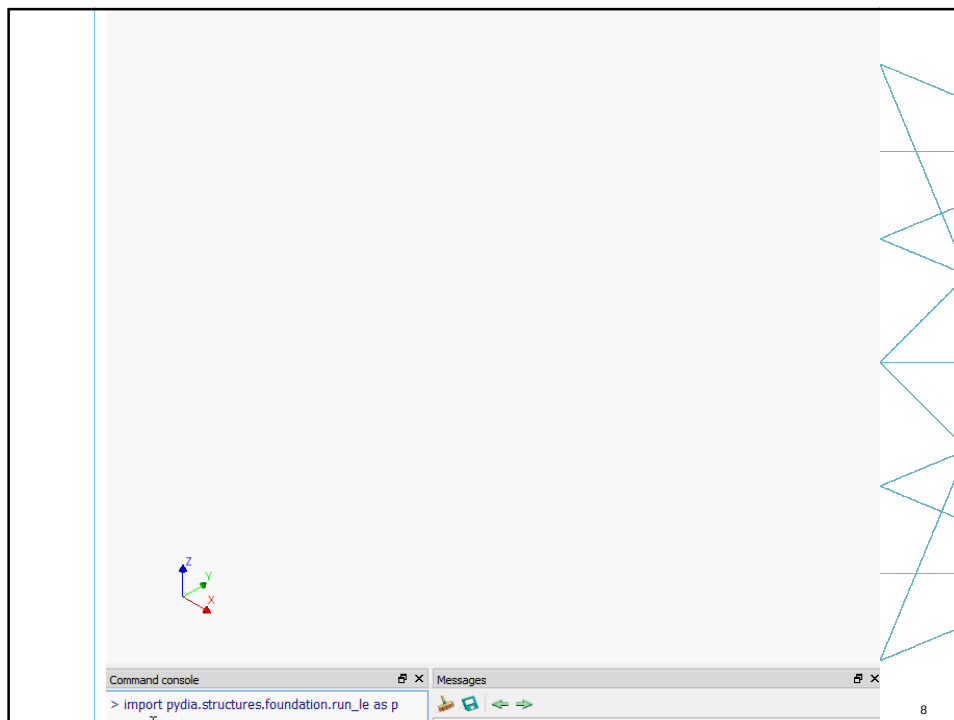
Geometrie

- Parameters
- Objecten
 - Methods -> bereken_rotatie()
 - Properties -> inhoud
 - Node locaties

```
piles = FoundationPiles(  
    name="piles",  
    slope=1 / 8,  
    z0=0,  
    n=12,  
    radius_array=foundation_block.radius_base - 0.5,  
    radius_piles=0.596 / 2.0,  
    length=10,  
    material=mat.concrete_linear_elastic_weightless,  
    solid=True,  
    introducer_ring=True  
)
```

```
foundation_block = FoundationBlock(  
    name="foundation_block",  
    radius_base=9 / 2,  
    height_base=1.2,  
    inner_radius_cone=3.618 / 2,  
    height_cone=0.3,  
    height_sokkel_bottom=0,  
    radius_sokkel_bottom=0,  
    height_sokkel_top=0.864,  
    radius_sokkel_top=3.618 / 2,  
    element_size=0.2  
)
```

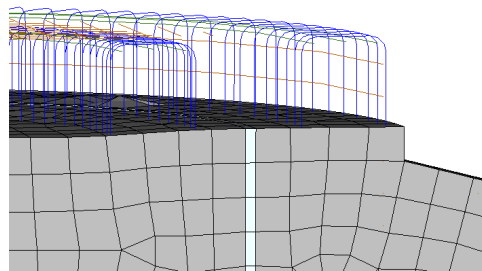
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Toepassing ABT

Wapening

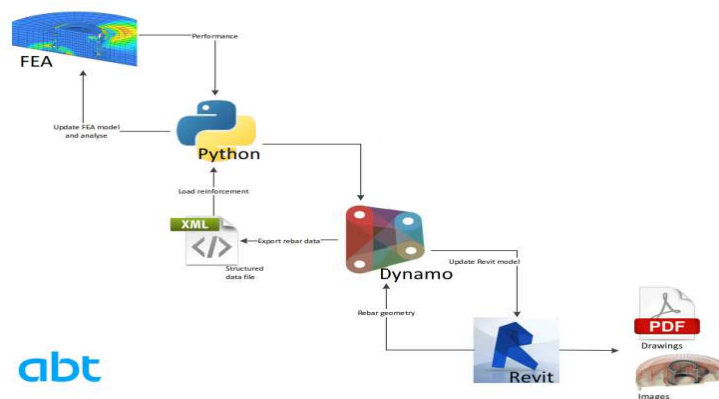
- Parameters?
- DXF invoeren -> Verankeringslengte?
- Handmatig in code?
- Bochtstralen?



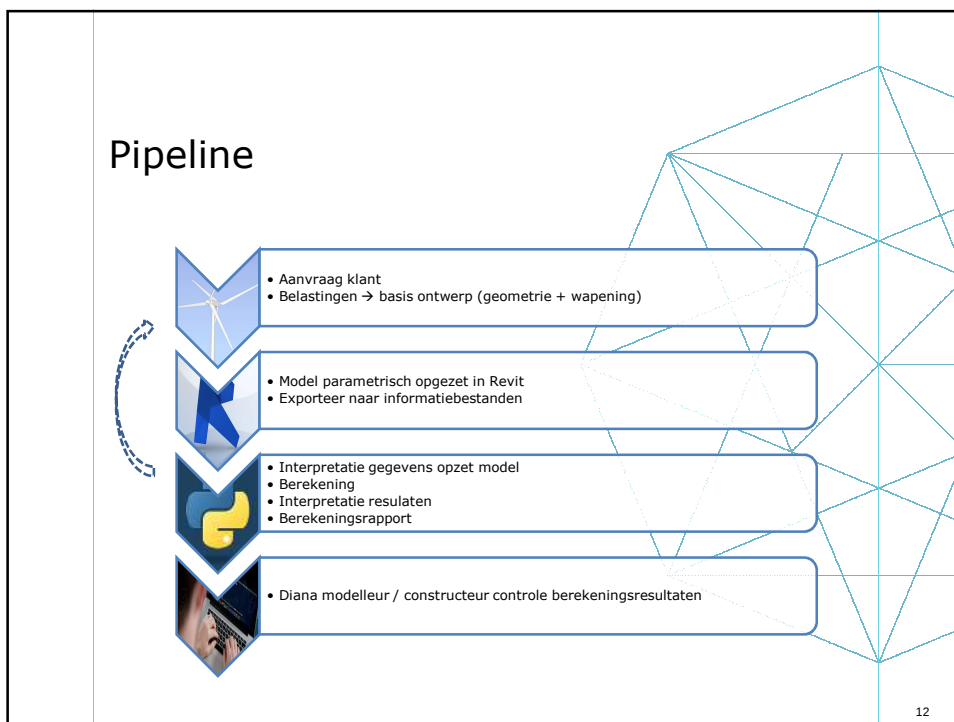
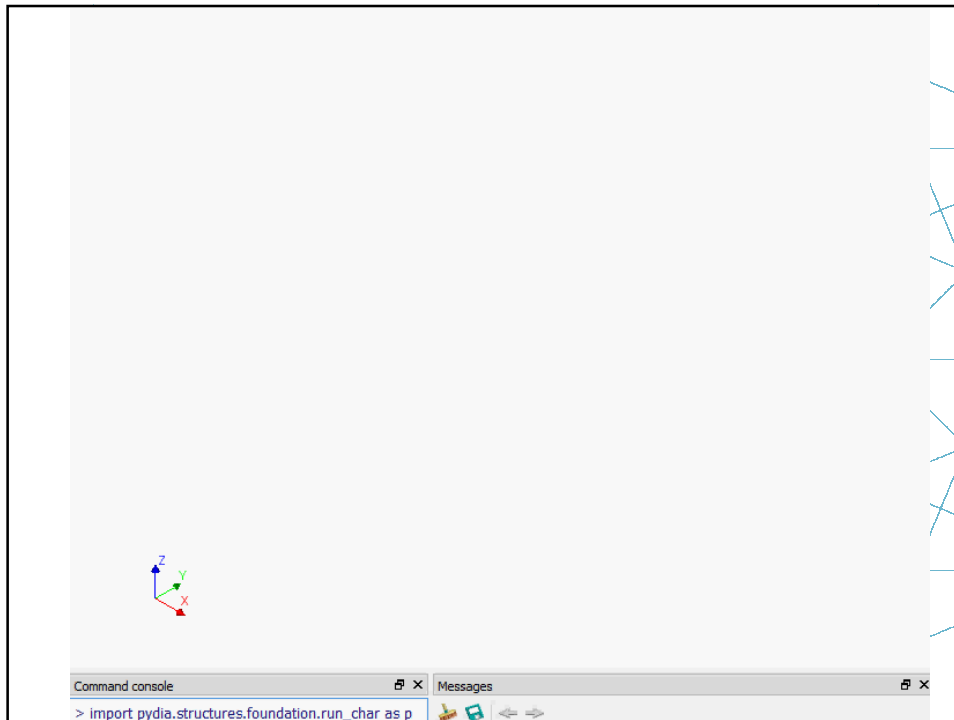
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Pipeline

Optimisation of rebar configurations using Dynamo and FEA



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Python programming language

- General purpose (Web Development, Science, Software Development, etc)
- Object oriented
- Leesbaarheid
- Open source
- Standard library
- External library
- Interpreted



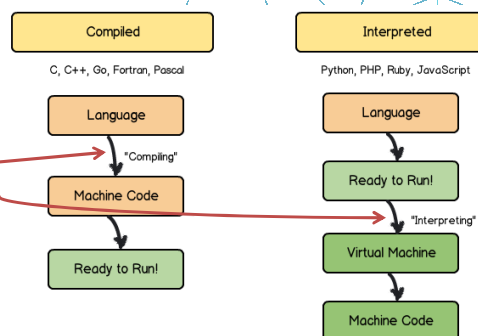
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Python programming language

Interpreted languages

- Flexibel
- Interactief
- Langzamer

Syntax check
Type check



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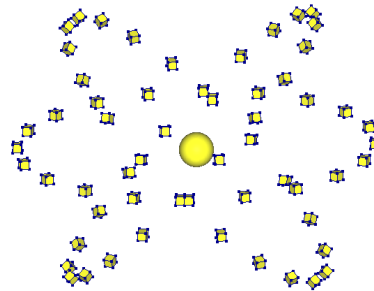
Nutteloos interactief voorbeeld

ABT's framework built on the DIANA API

<..\Documents\My CamStudio Videos\atom.avi>

Nuttige modules

- Interfaces
- Lines
- Shapes
- Tyings
- Loads
- Mesher
- Sheets
- Supports
- Post processor



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Vragen?

Meer informatie:

www.abt.eu

www.ritchievink.com

[www.github.com/ritchie46](https://github.com/ritchie46)

meer over (DIANA-)projecten
blog en reken tools
open source projecten

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