Creating 3D object with DNA or How we use Cadnano to design a 2D spade and the importance of staple placement in the stability of the final shape

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Introduction

- Connexion A - T and G - C
- Scaffold
- Staples

**Figure**: Spade created on Cadnano
And... in detail?

How do you turn?

- Scaffold: virus
- We know where it can turn
And... in detail?

- How do you turn?
  - Scaffold: virus
  - We know where it can turn
- But how to be sure?
And... in detail?

- How do you turn?
  - Scaffold: virus
  - We know where it can turn
- But how to be sure?
  - Position staples $\rightarrow$ Force the turn

Figure: Memberberries
What we did

- We like cards so...
What we did

- We like cards so...

Figure: Model results with Cando
Our conclusion

- The stability
- Heat map of the fluctuation

**Figure:** Heat map

- Video comparative
Conclusion

- Scaffold : Hamiltonian path
- Link with staples
- Staples at random for more efficiency
Conclusion

- Scaffold: Hamiltonian path
- Link with staples
- Staples at random for more efficiency
- And now you can play poker at a molecular level!
- Any questions?