



# Conexiones

Estructuras en Concha – Bambú

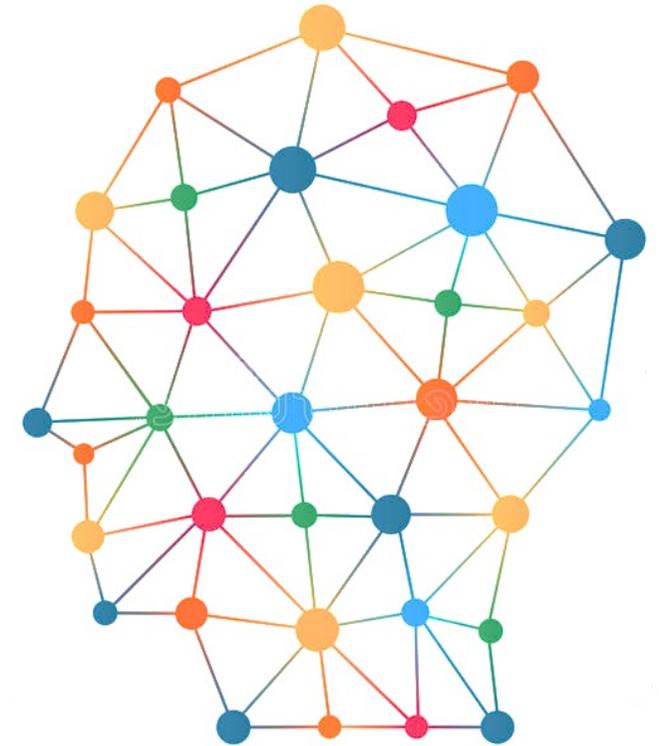


UNIVERSIDAD CENTRAL DEL ECUADOR  
*Omnium potentior est sapientia*

**UMONS**  
Université de Mons

## IMPORTANCIA CONEXIONES

Al buscar un diseño estructural completamente funcional sus elementos de unión y conexiones deben diseñarse para que trabajen adecuadamente ante las diferentes solicitaciones a las que estará expuesta la estructura durante su vida útil.



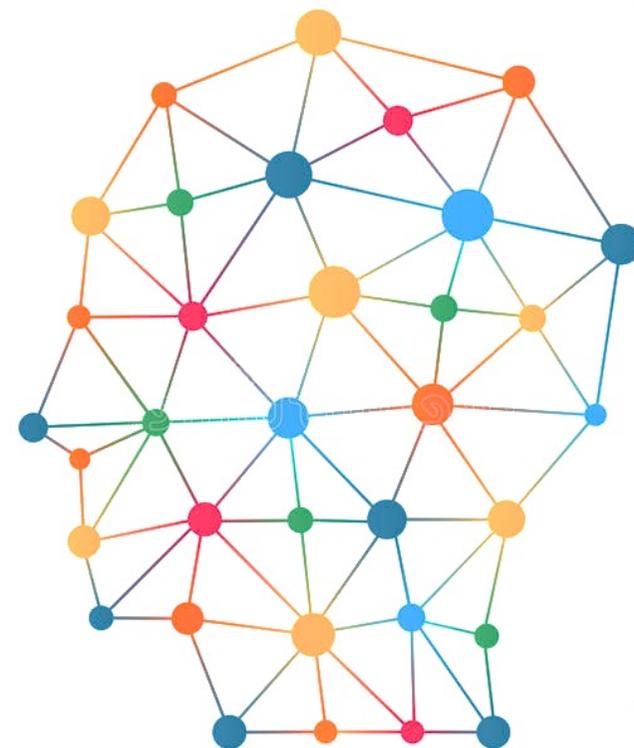
## FUNCIONES DE LAS CONEXIONES



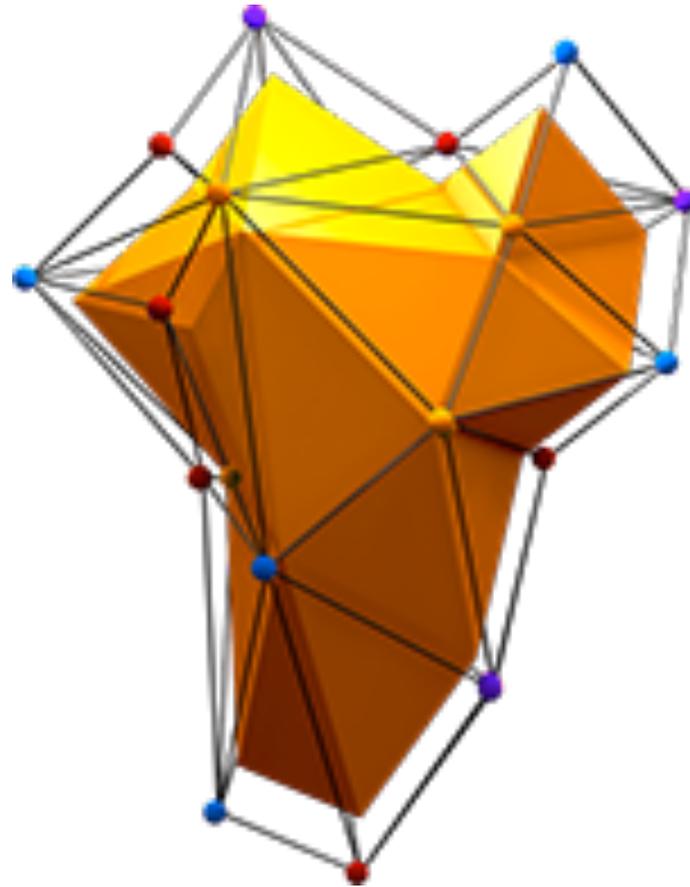
Dar continuidad  
a E. generados  
en estructura  
agresiva

Articulación  
estrategia que  
da resultado a  
los C Dimen

Medio de  
afianzamiento  
(herraje  
metálicos)

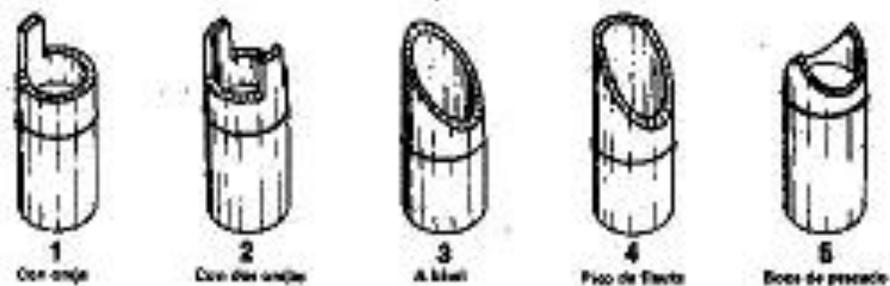
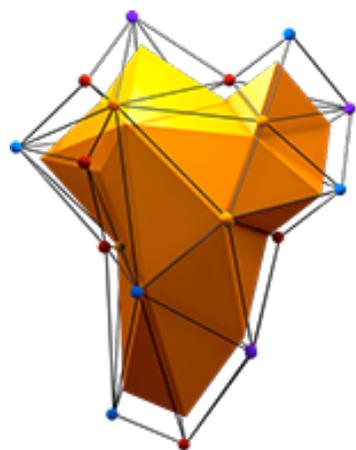


INNOVACION ?



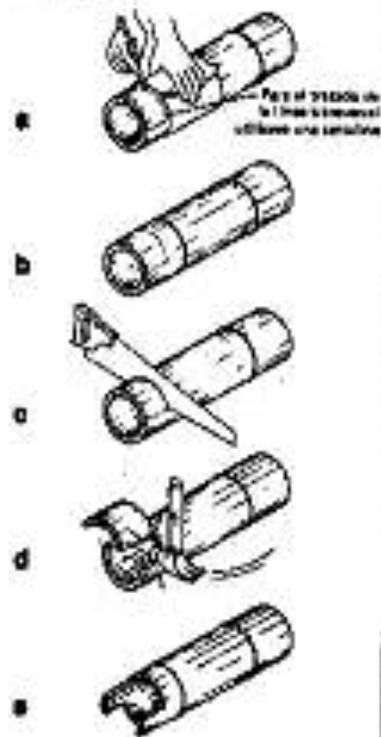
Conexiones  
mas usadas

# CONEXIONES

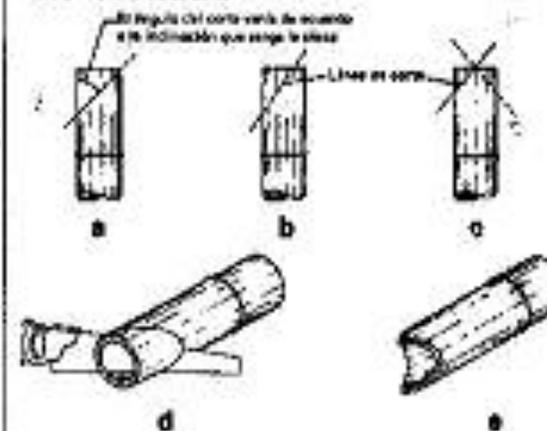


## ELABORACION

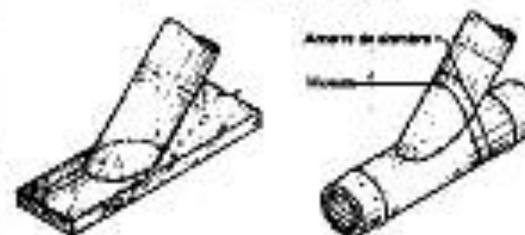
Trazado y marcado



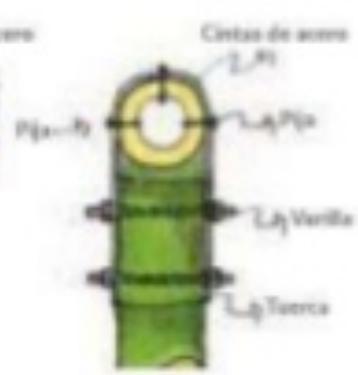
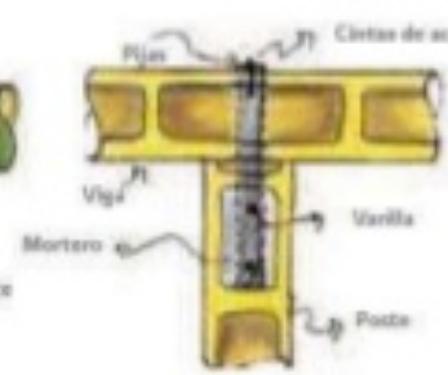
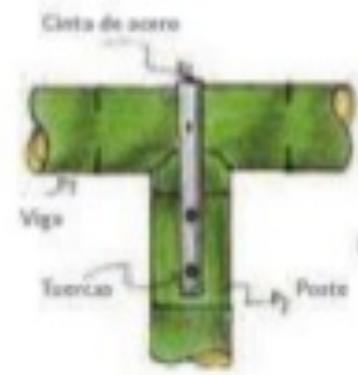
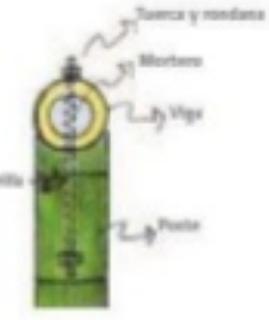
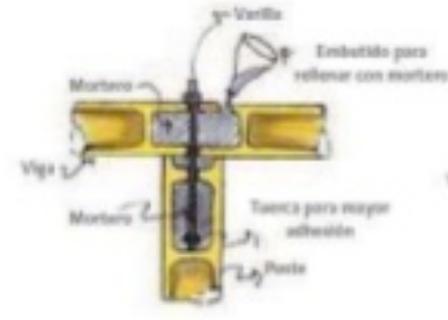
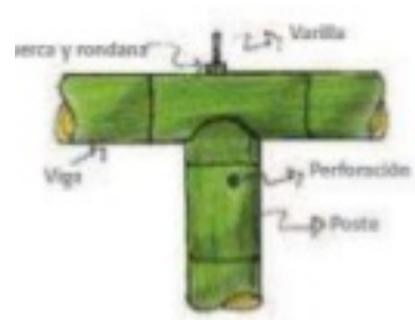
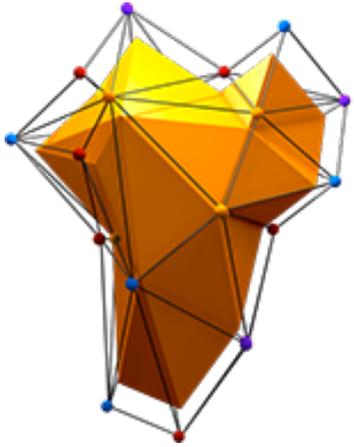
Posición de la línea de corte



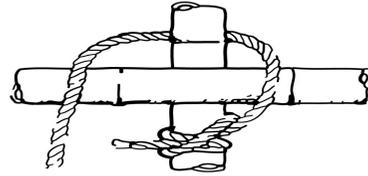
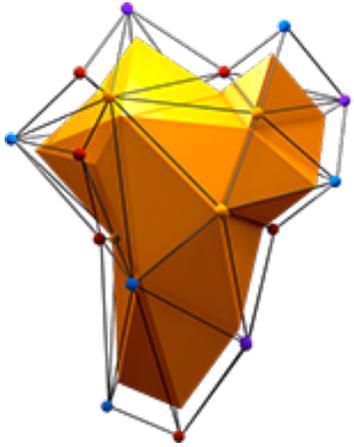
Aplicación de la entalladura B y L



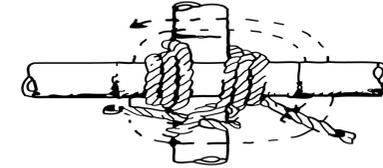
# CONEXIONES



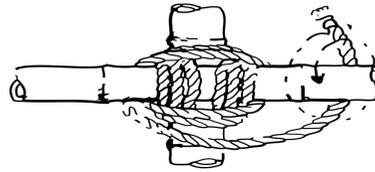
# CONEXIONES



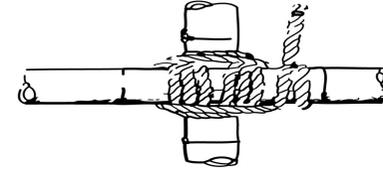
a



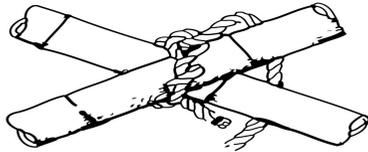
b



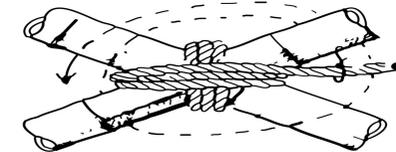
c



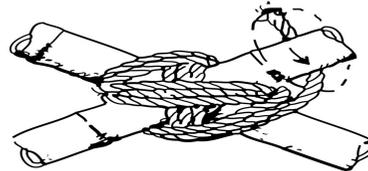
d



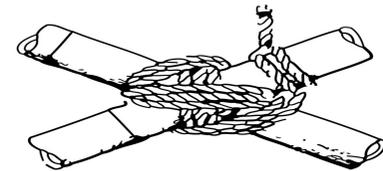
a



b

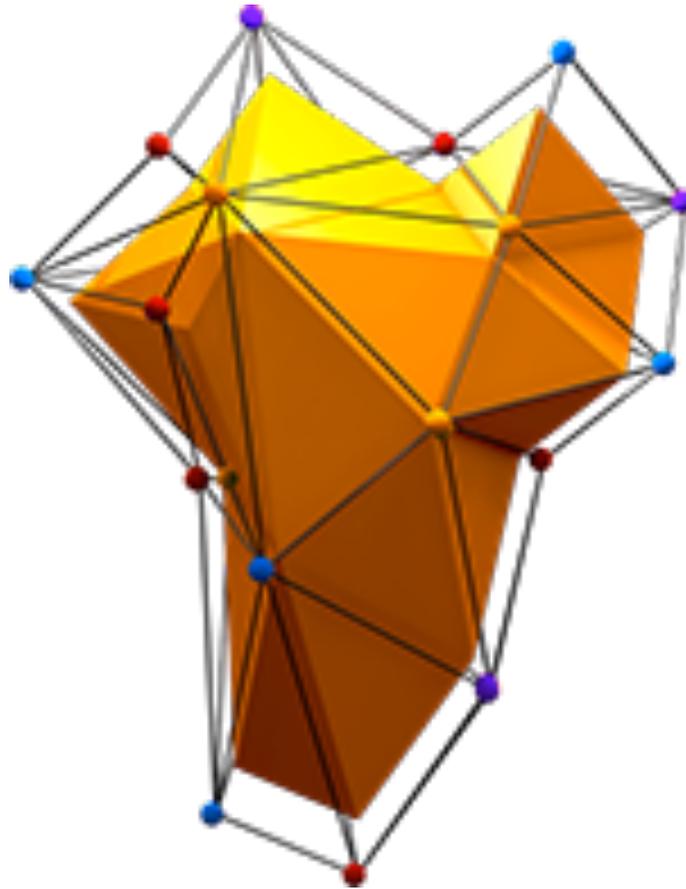


c



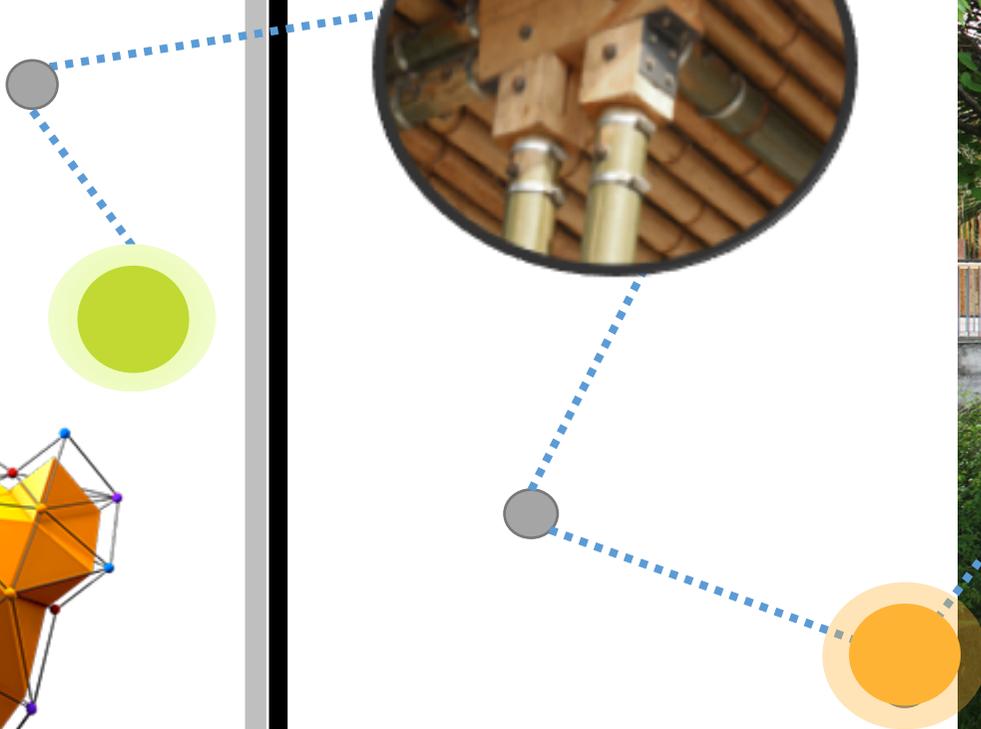
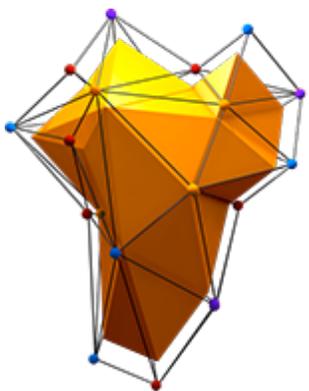
d

INNOVACION ?

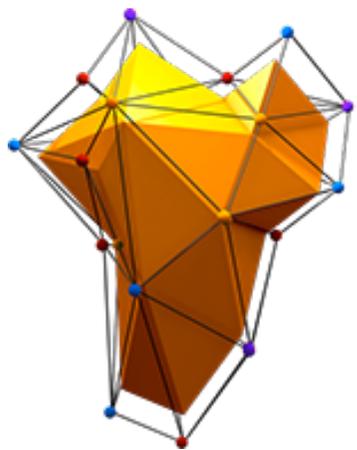


conexiones  
innovadoras

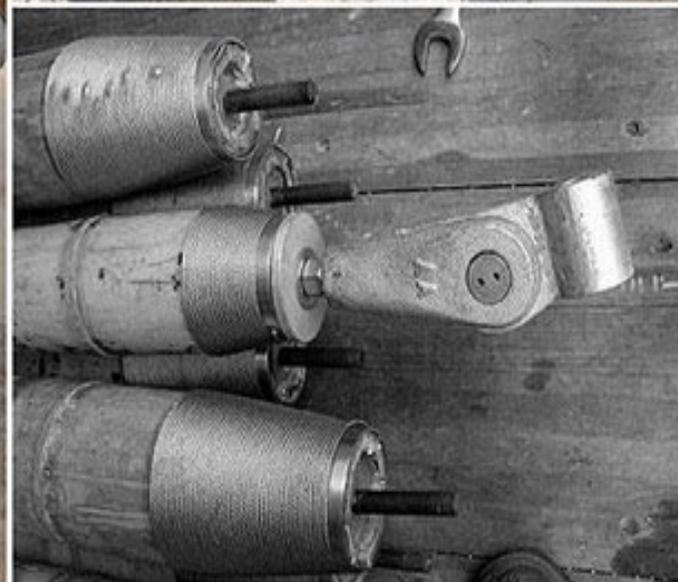
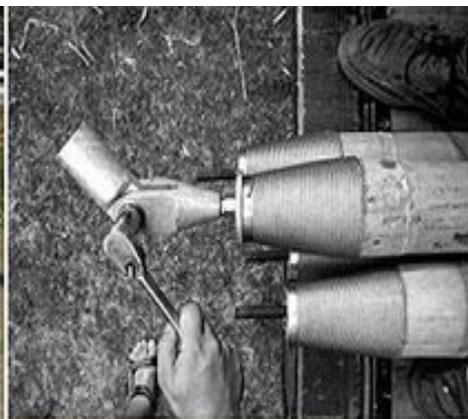
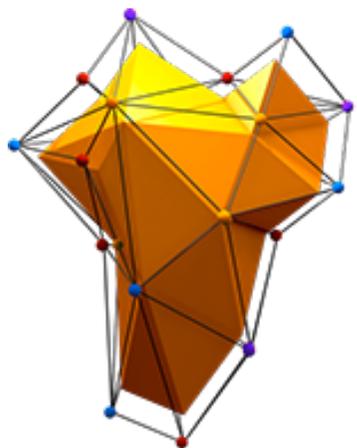
# CONEXIONES



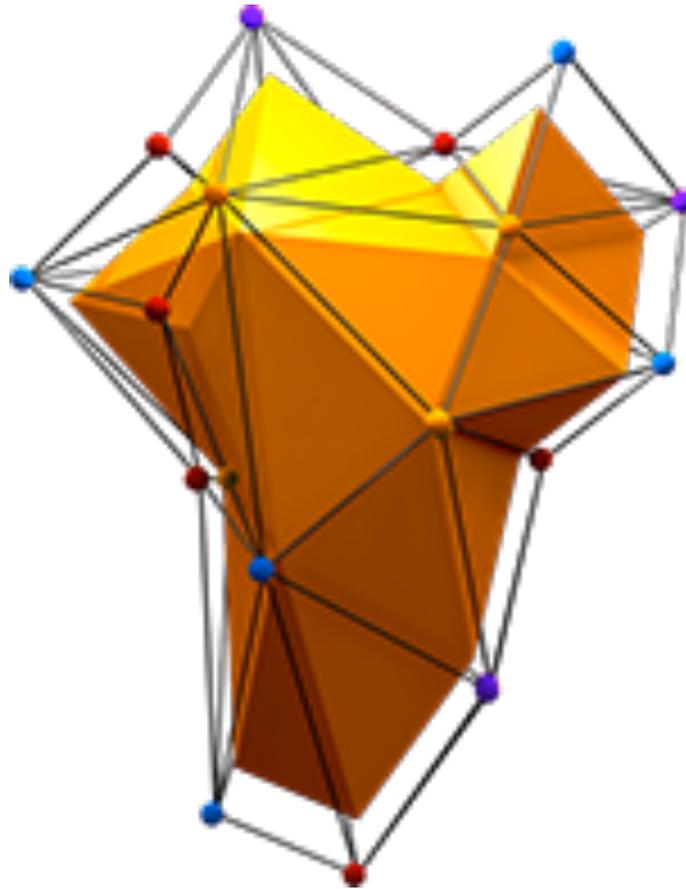
# CONEXIONES



# CONEXIONES

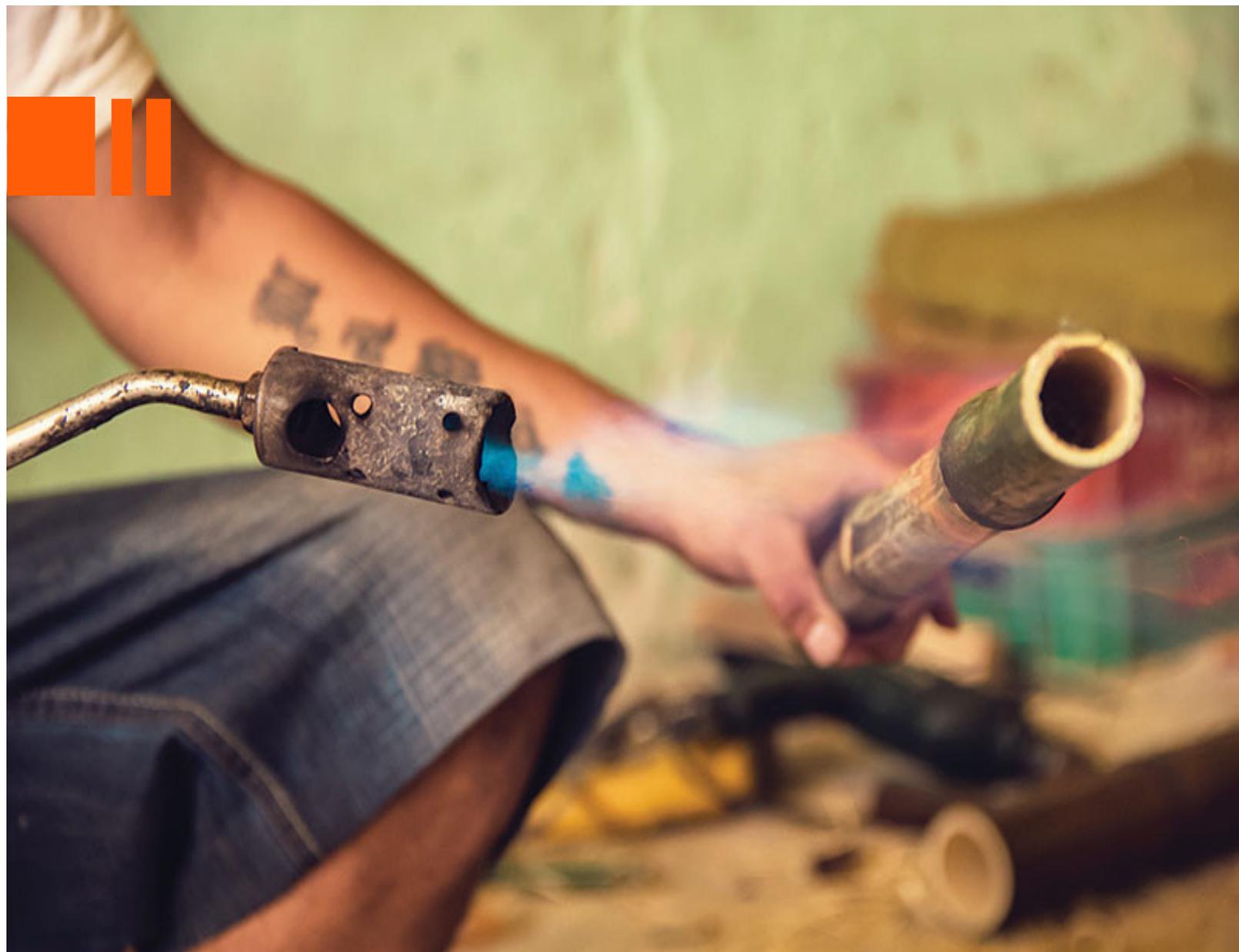
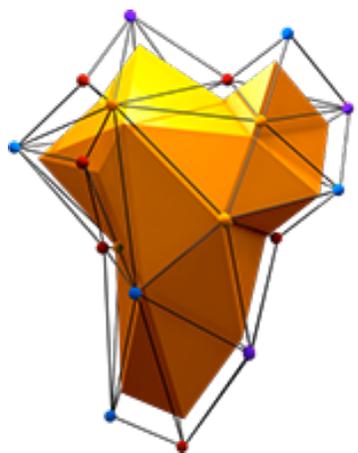


INNOVACION ?

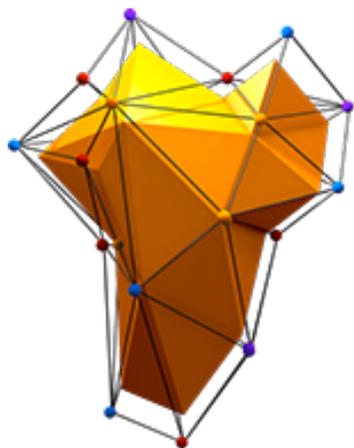


conexiones  
phyllostachys

## CONEXIONES



# CONEXIONES



## Amarras Básicas

### Amarra Quadrada

Início volta do fiel ou volta da ribeira

Arremate

Apertar bem. Uma sugestão é finalizar com o nó direito.

### Amarra Diagonal

Início volta do fiel ou volta da ribeira

Voltas cruzando a madeira

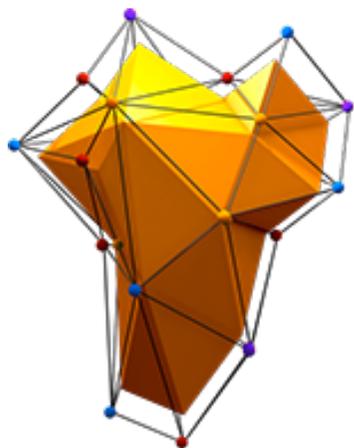
Apertar bem. Uma sugestão é finalizar com o nó direito.

### Amarra Paralela ou Redonda

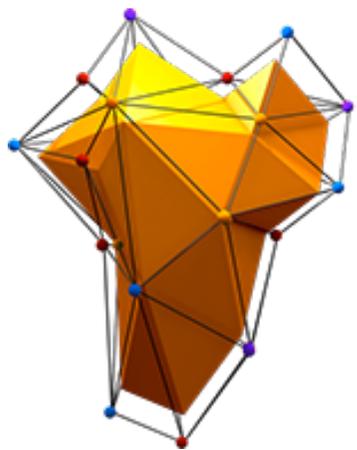
Amarra indicada para unir dois troncos paralelos, há vários modos de se fazer este tipo de amarra. Pode-se iniciar com uma volta do fiel dar de sete a oito voltas em torno dos troncos, arrematar, e finalizar com um nó direito ou um laço de guia (como na Figura ao lado). Uma outra maneira também pode ser iniciando com a volta do fiel, e entrelaçar os troncos fazendo oito com o cabo, arrematando e finalizando adequadamente.

CÉU E MAR  
SOLUÇÃO DE ENGANALHAMENTO

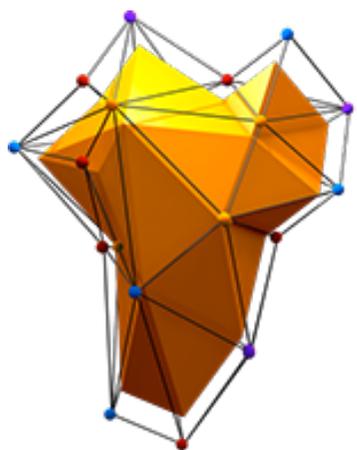
## CONEXIONES



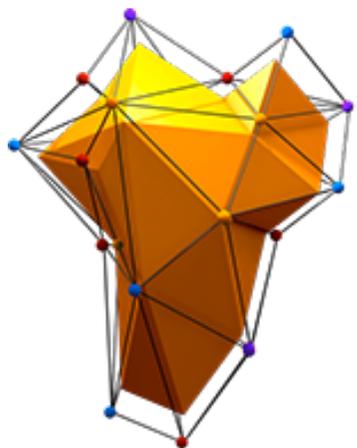
# CONEXIONES



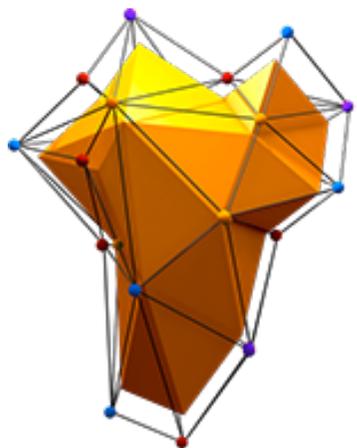
## CONEXIONES



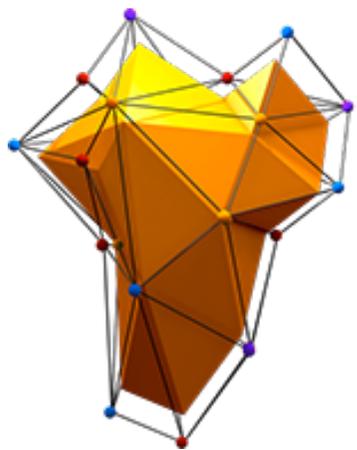
## CONEXIONES



## CONEXIONES



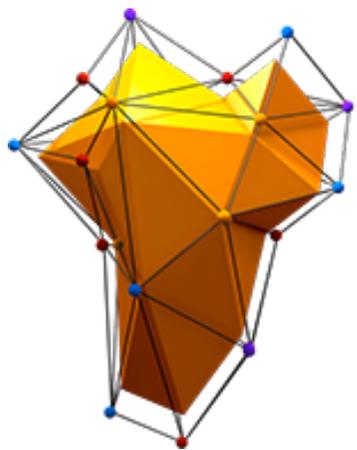
## CONEXIONES



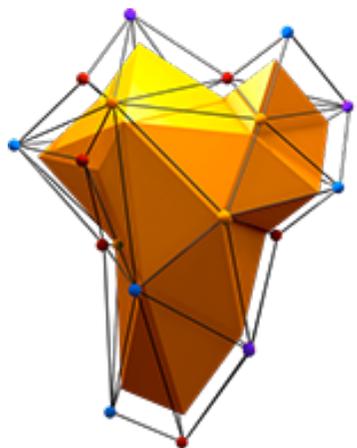
*Pinit*



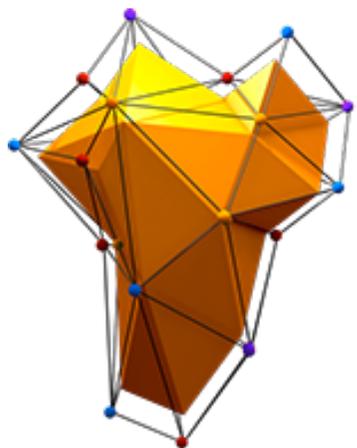
# CONEXIONES



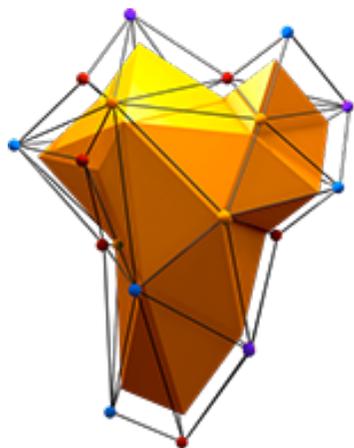
# CONEXIONES



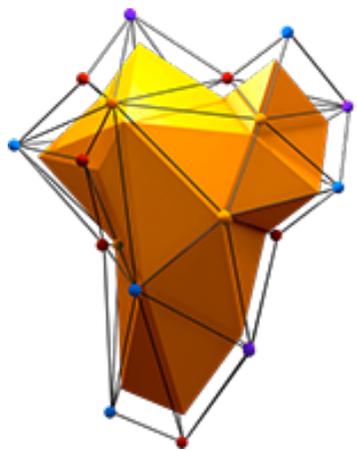
# CONEXIONES



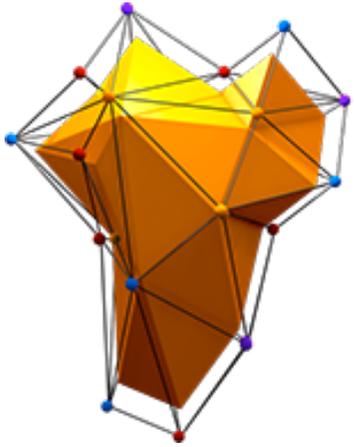
## CONEXIONES



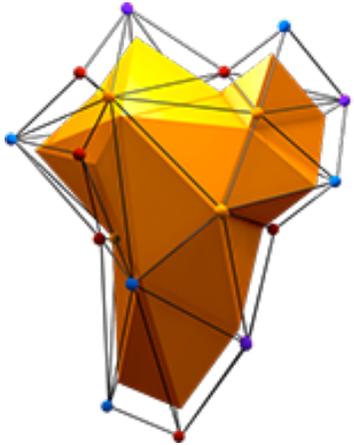
# CONEXIONES



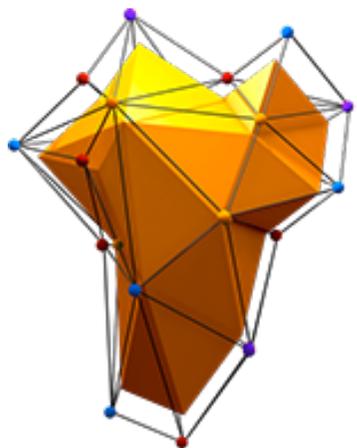
# CONEXIONES



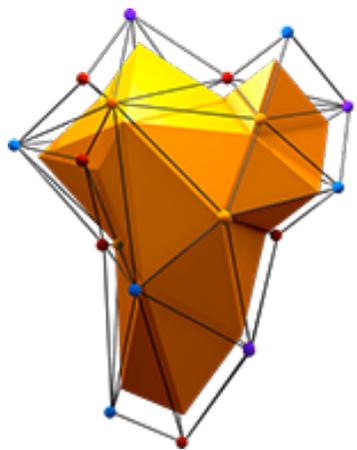
# CONEXIONES



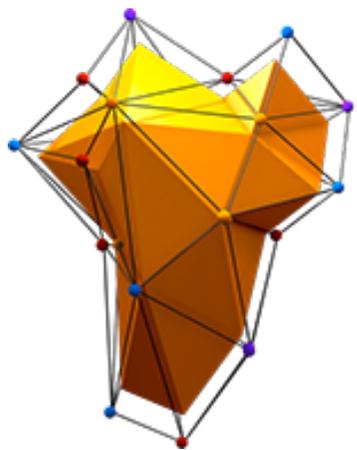
# CONEXIONES



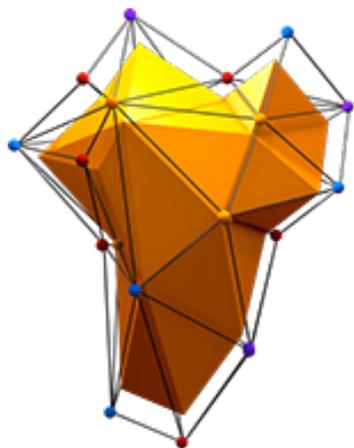
## CONEXIONES



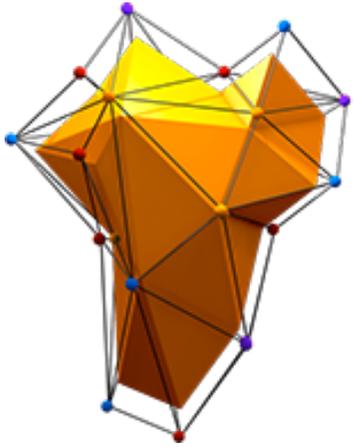
# CONEXIONES



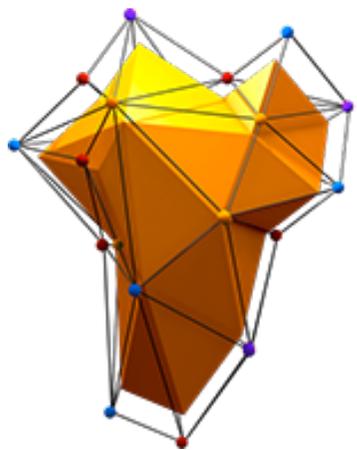
# CONEXIONES



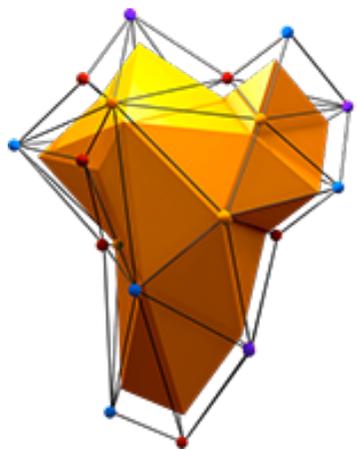
# CONEXIONES



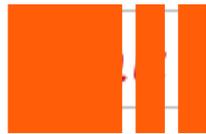
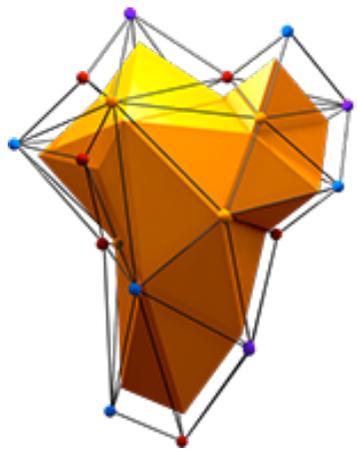
# CONEXIONES



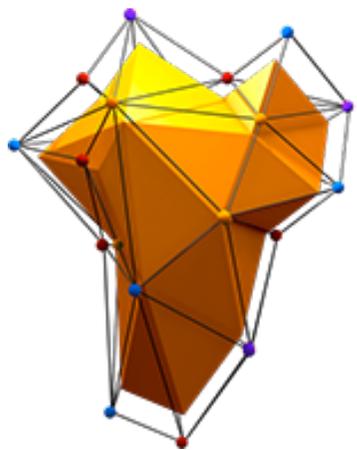
# CONEXIONES



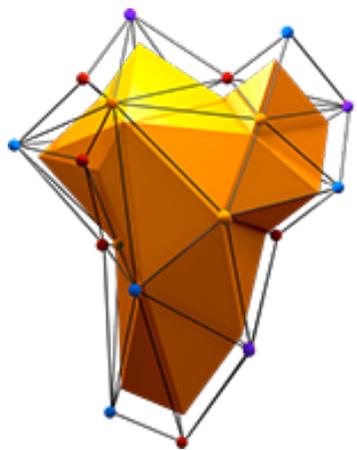
# CONEXIONES



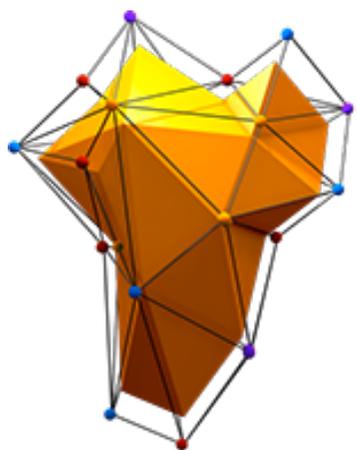
# CONEXIONES



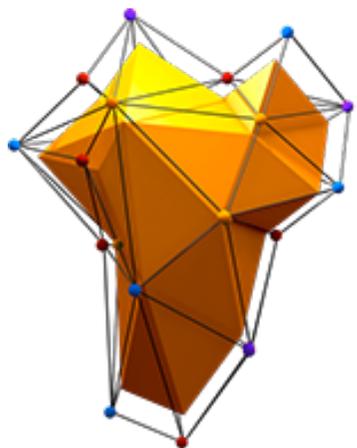
# CONEXIONES



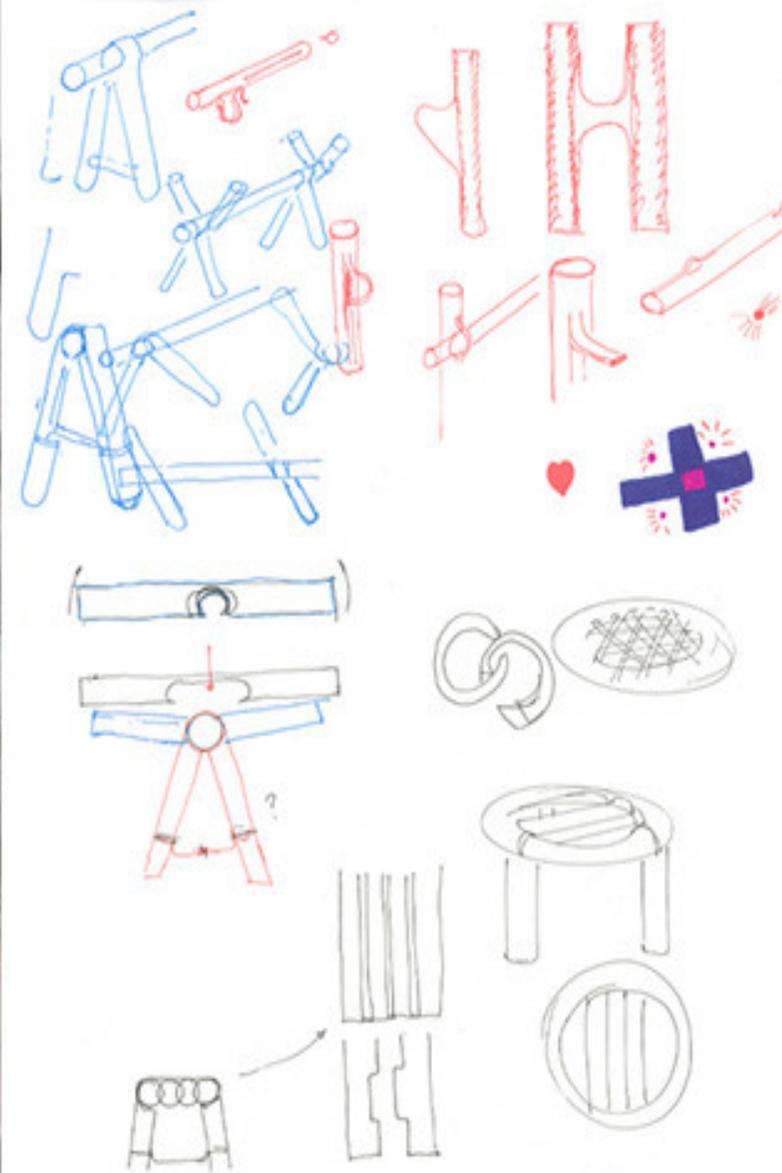
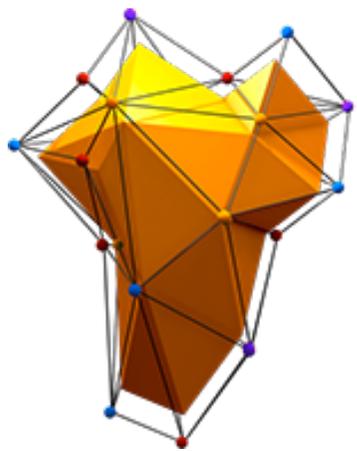
# CONEXIONES



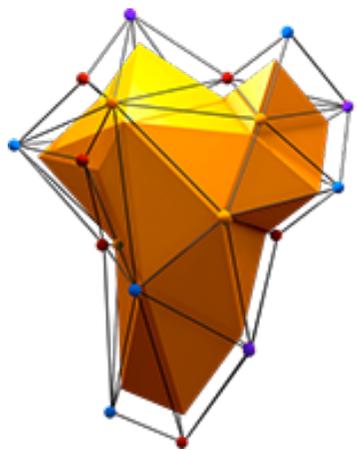
# CONEXIONES



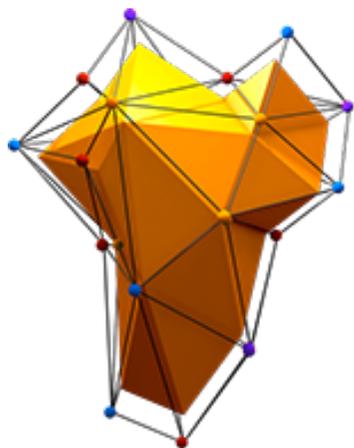
# CONEXIONES



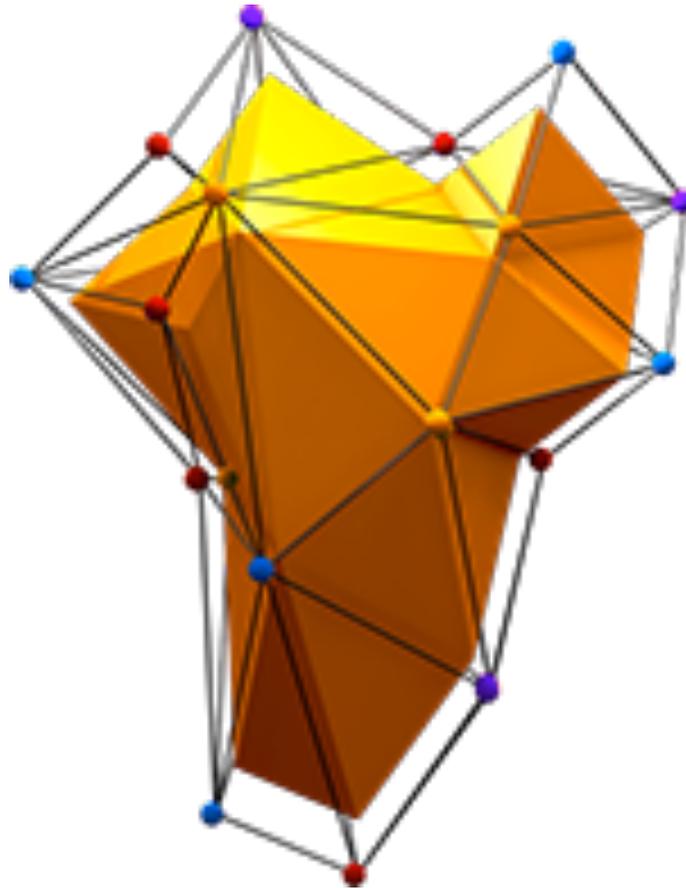
# CONEXIONES



# CONEXIONES

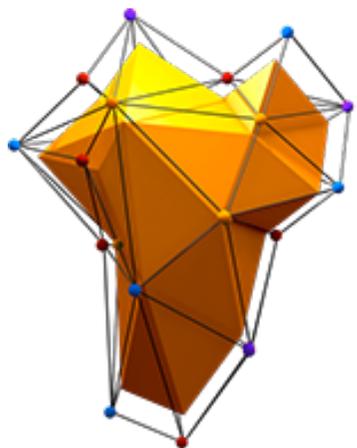


INNOVACION ?

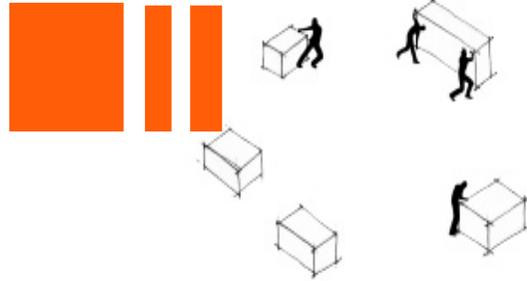
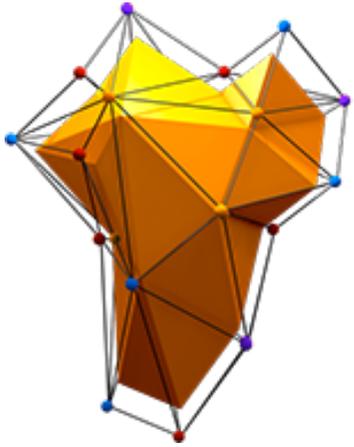


conexiones  
para conchas

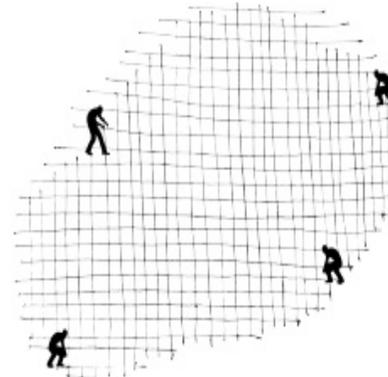
# CONEXIONES



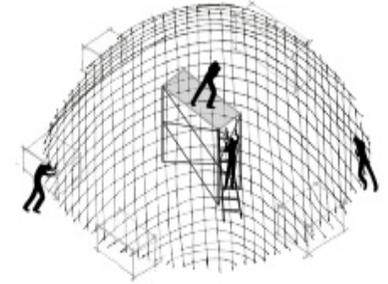
# CONEXIONES



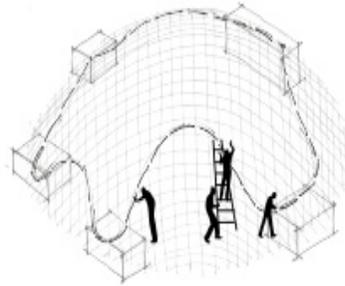
01 CAST FOUNDATIONS



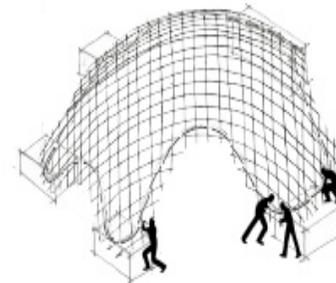
02 LAY OUT 20' x 20' FLAT LATTICE GRID



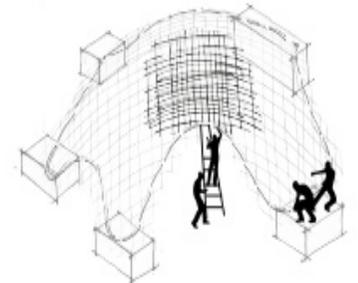
03 ERECT LATTICE VIA SCAFFOLDING



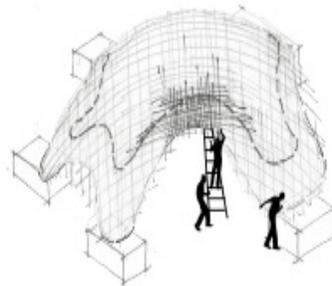
04 CONSTRUCT RIBBON



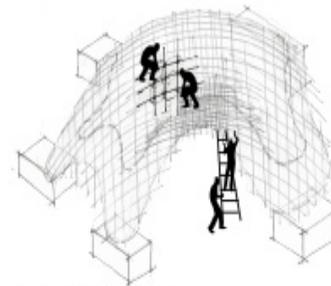
05 TRIM 20' x 20' LATTICE



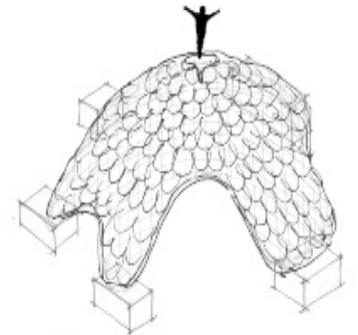
06 WELD ON 5' x 5' GRID SUBDIVISIONS



07 WELD 2.5' x 2.5' GRID DIVISION GRADIENT

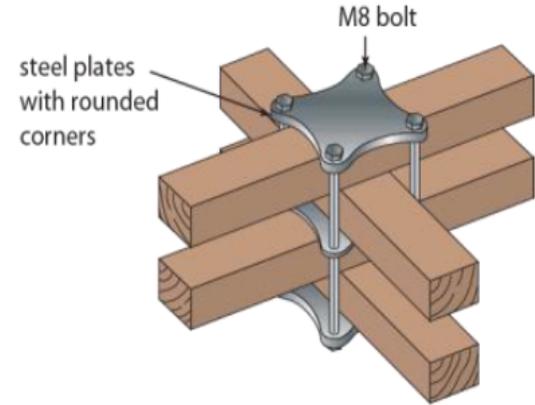
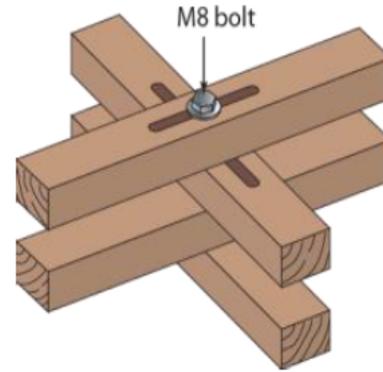
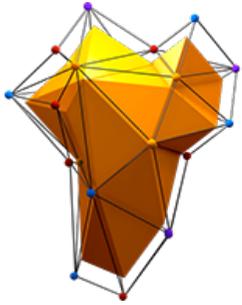


08 PLACE CLADDING AT 20' x 20' NODES

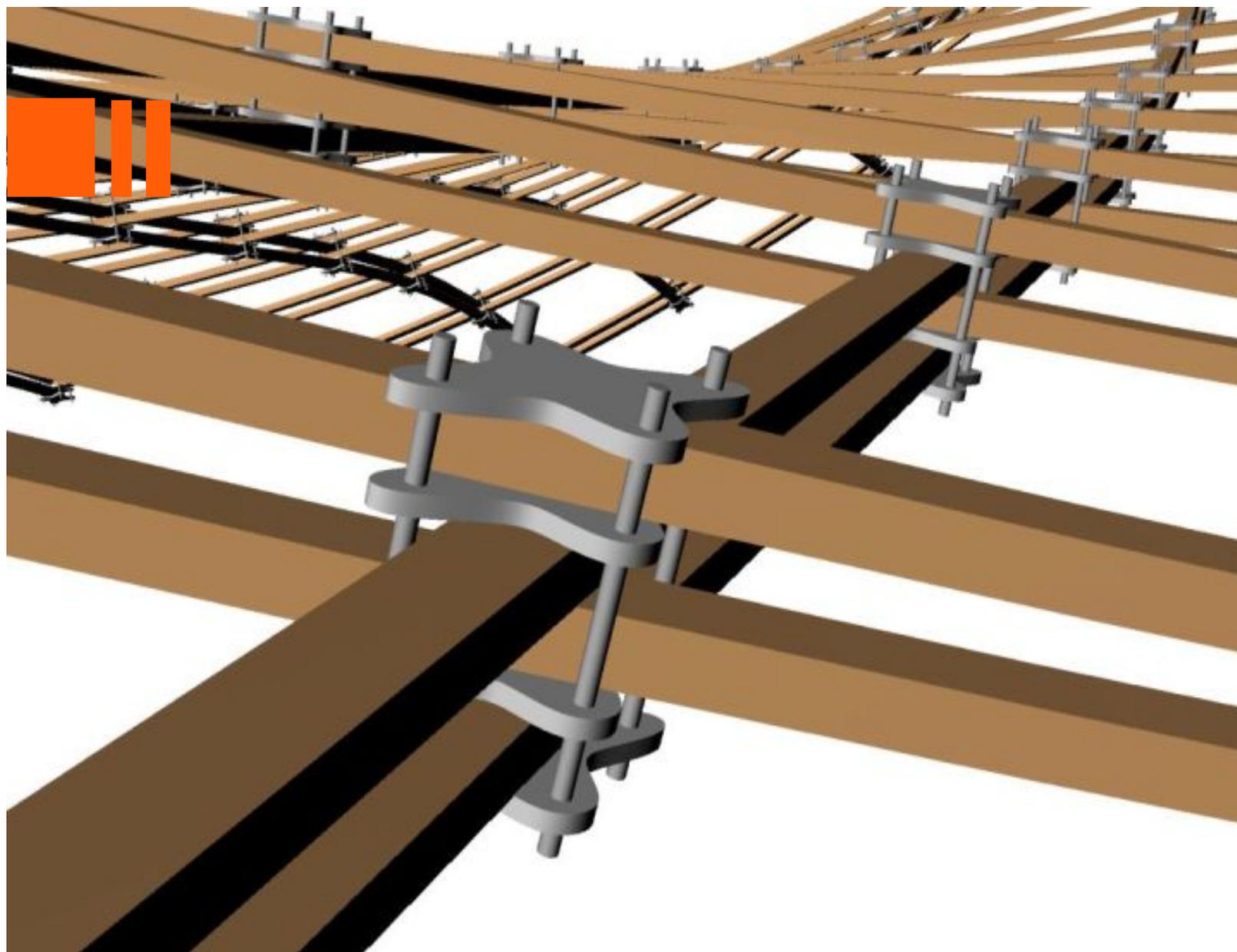
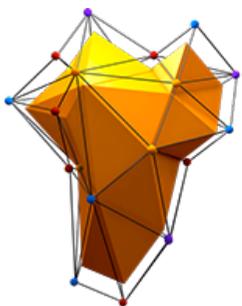


09 FULLY ASSEMBLED GRIDSHELL

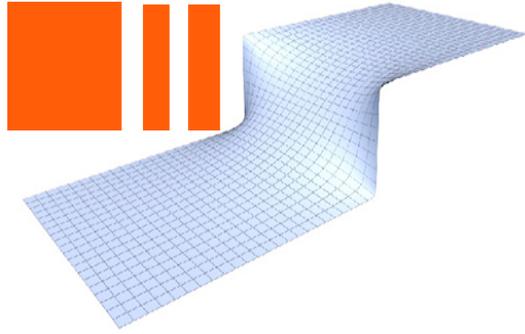
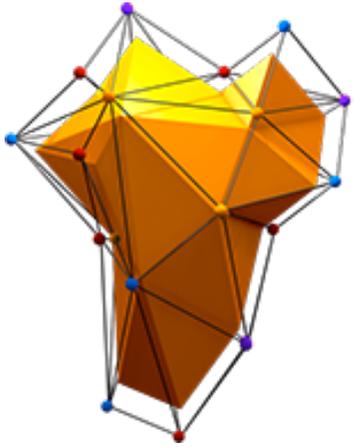
# CONEXIONES



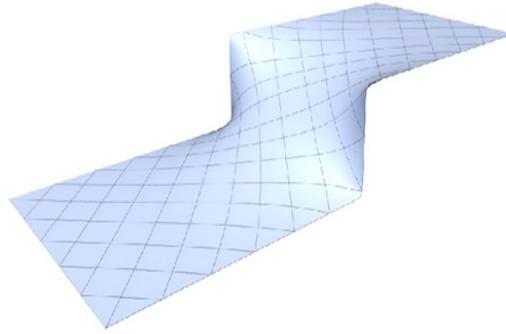
# CONEXIONES



# CONEXIONES



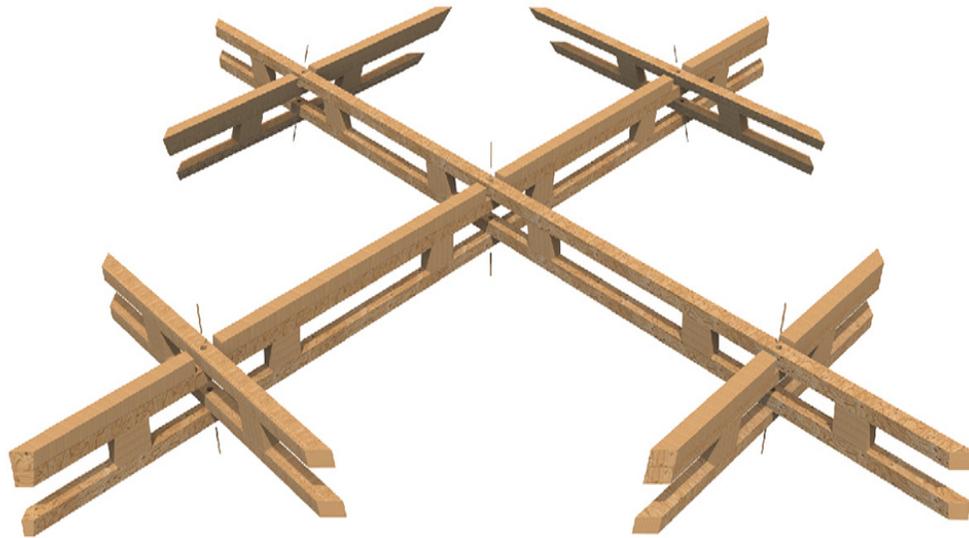
1. generic surface typology



2. planar pseudo-geodesic mapping

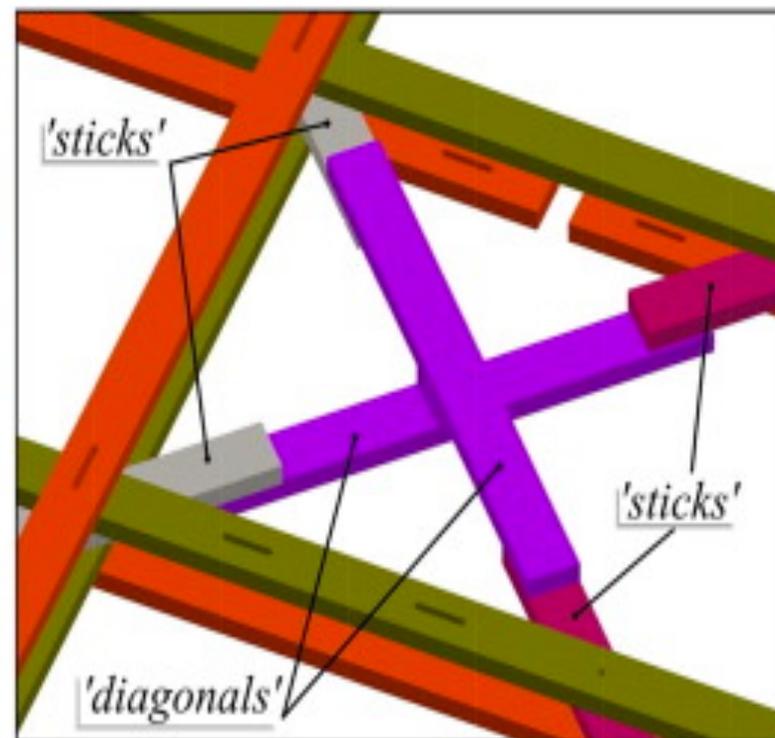
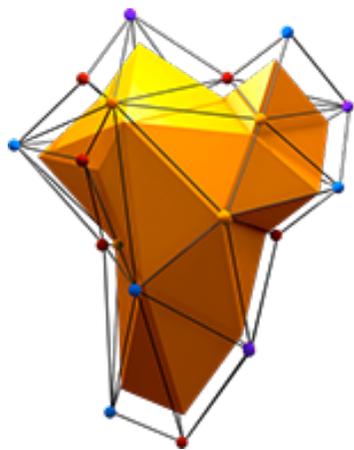


3. resulting single-curved gridshell structure

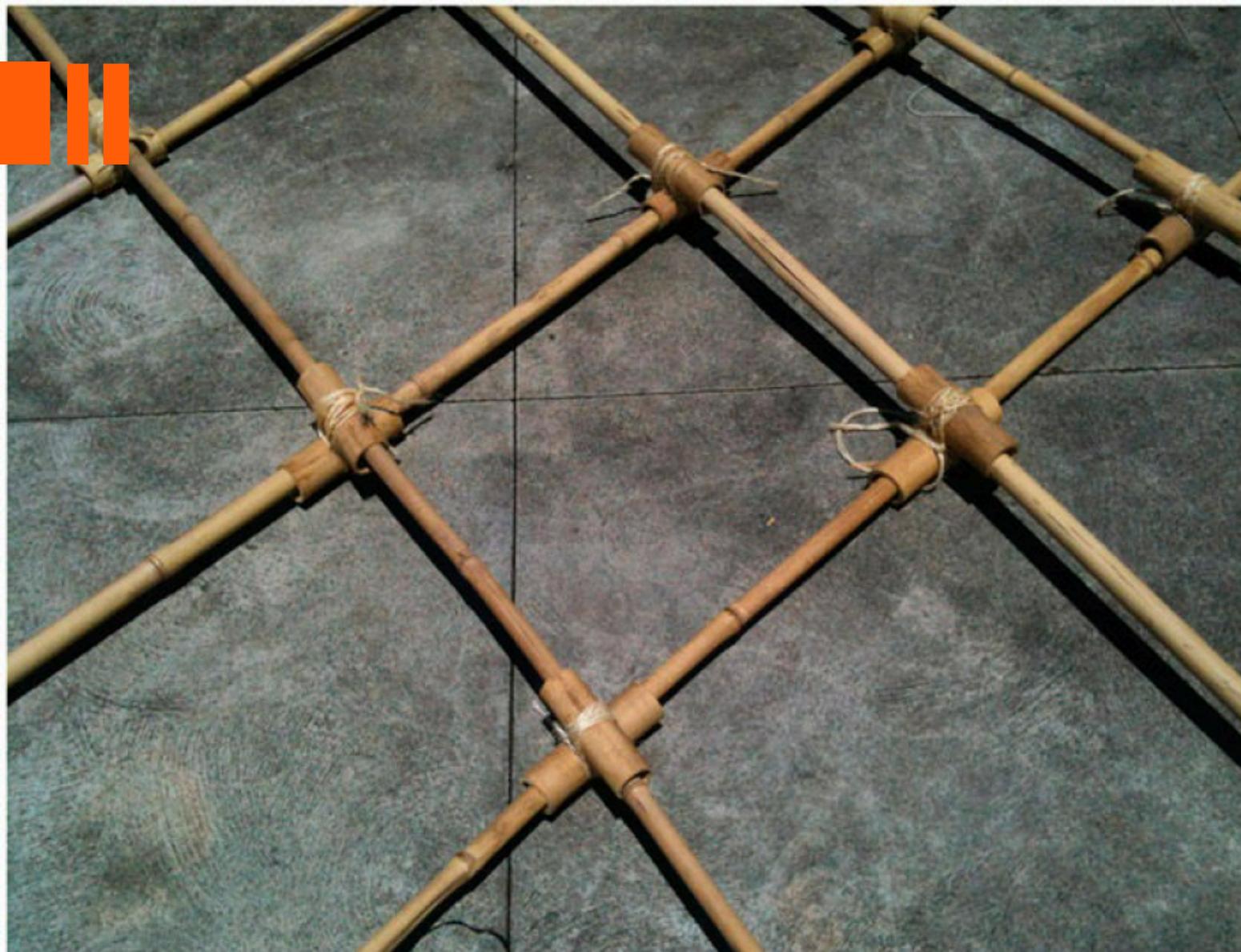
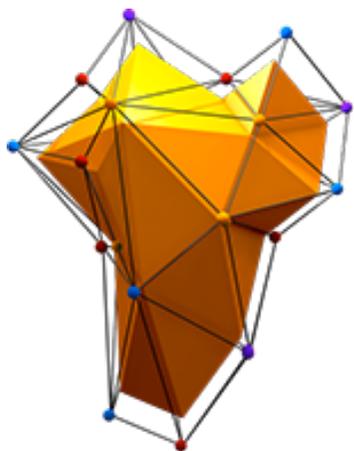


4. gridshell members connection diagram

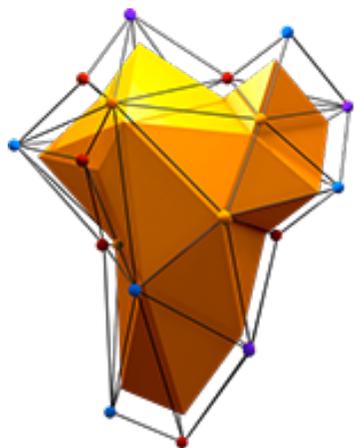
# CONEXIONES



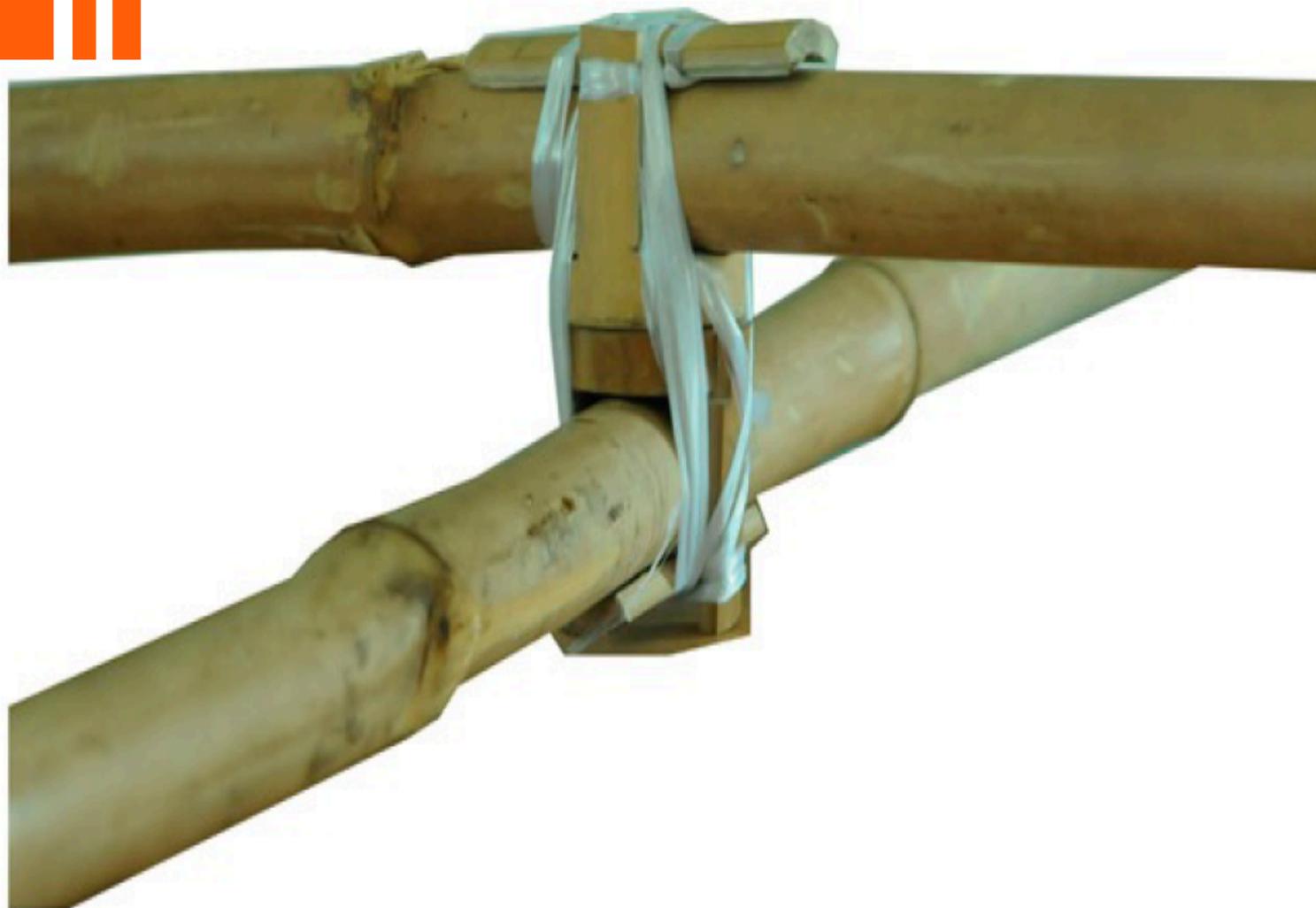
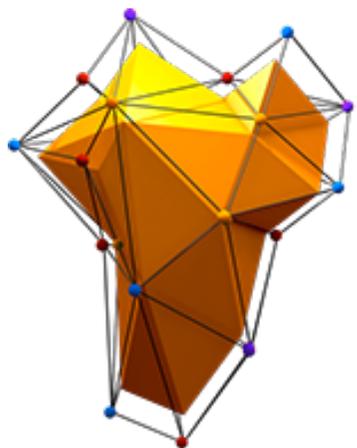
# CONEXIONES



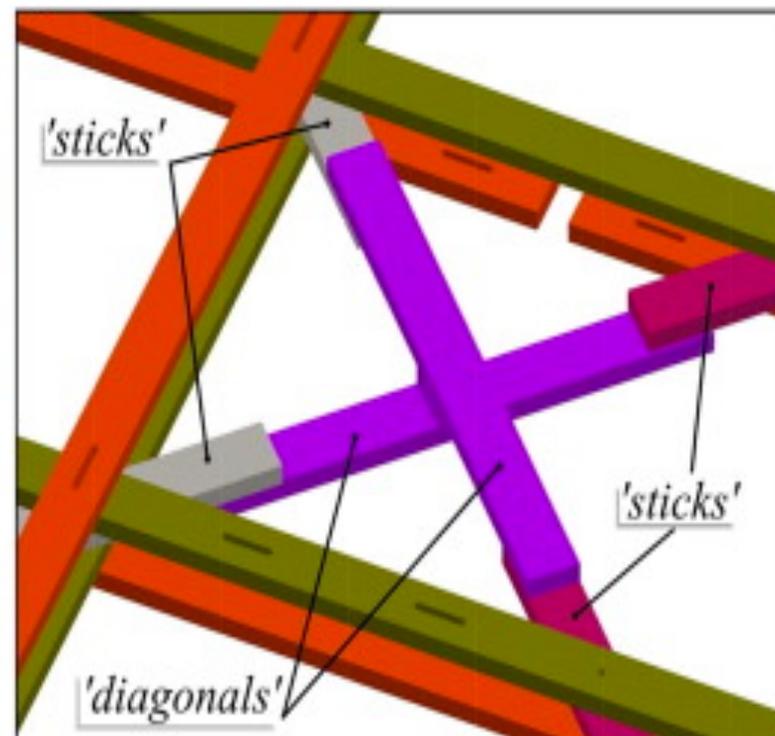
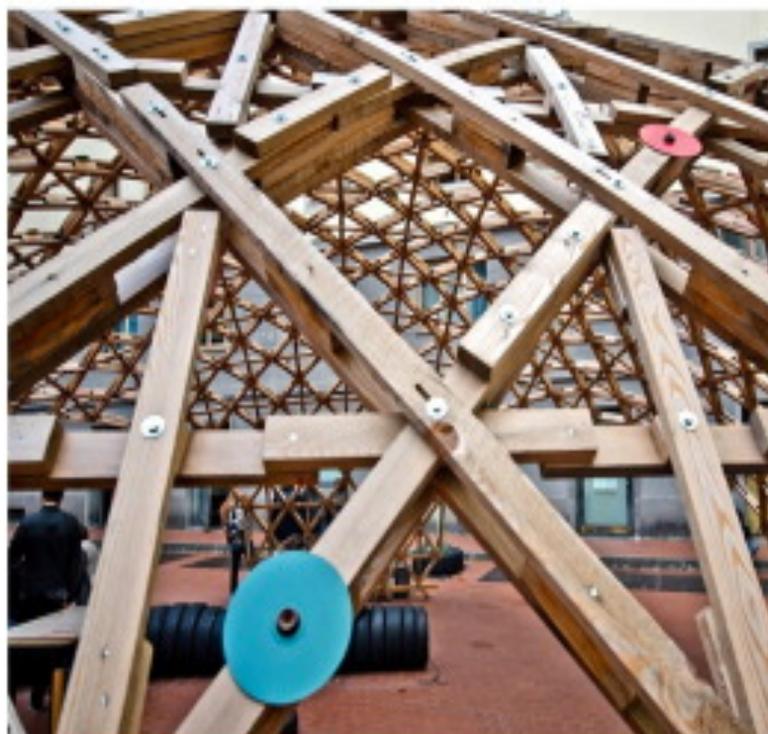
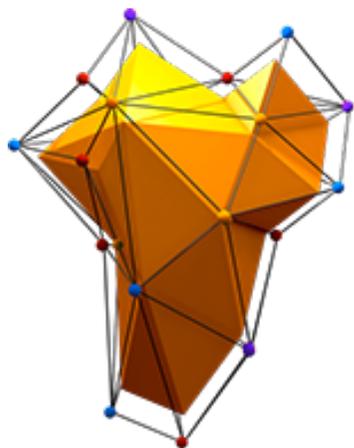
# CONEXIONES



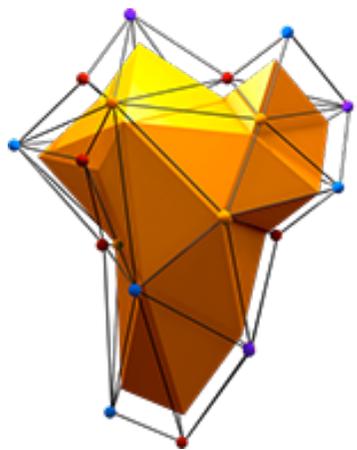
# CONEXIONES



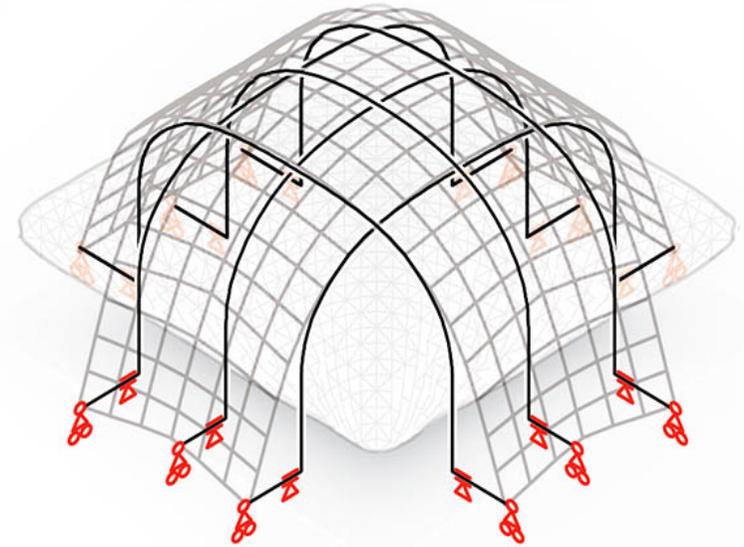
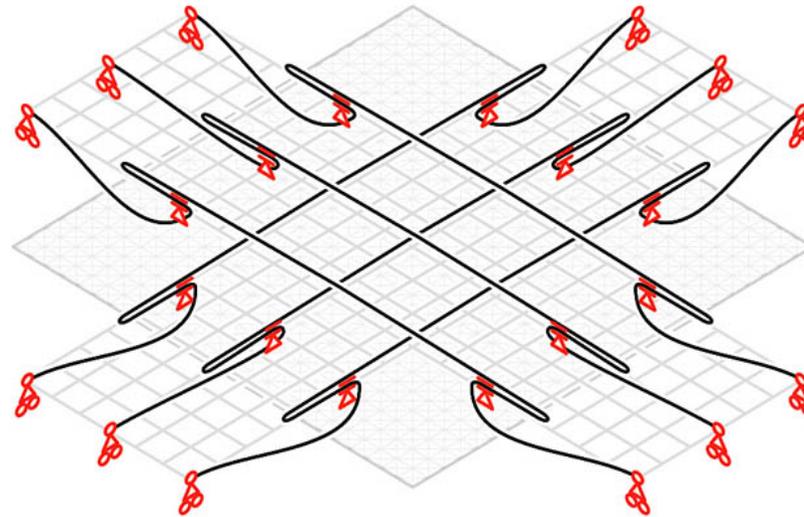
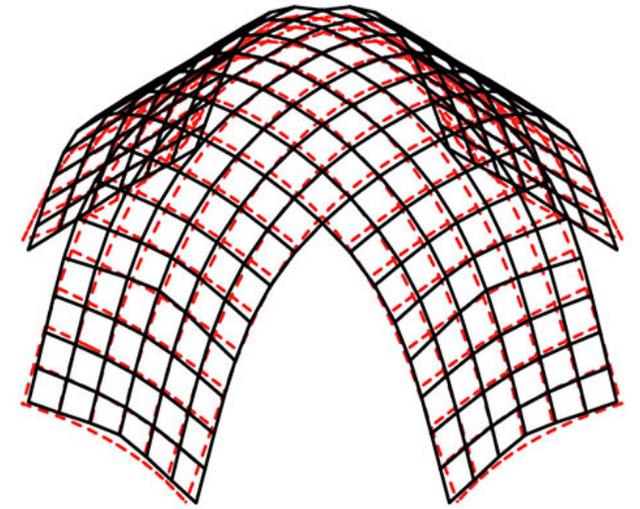
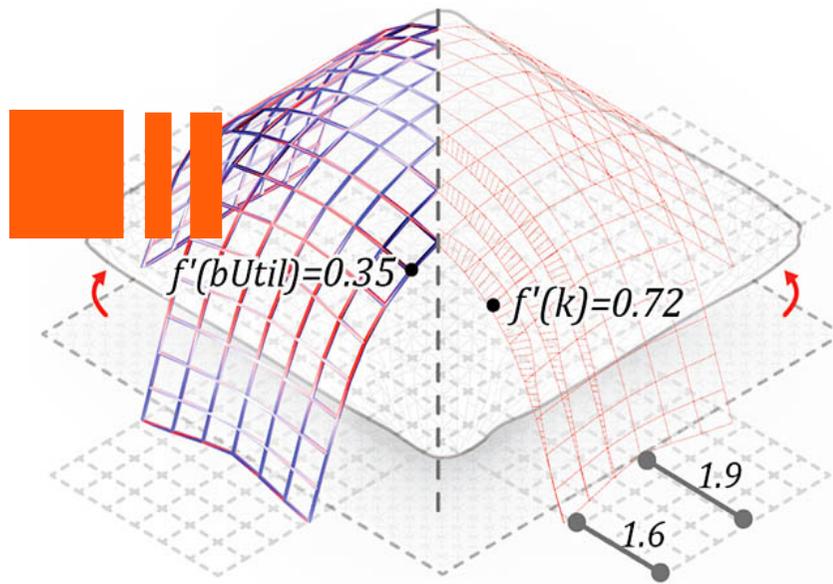
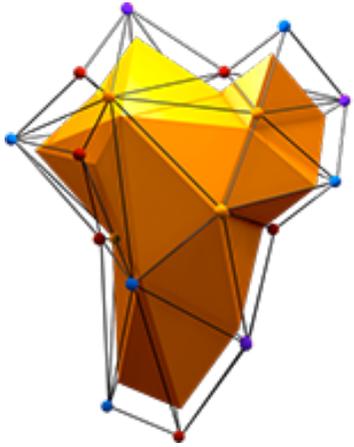
# CONEXIONES



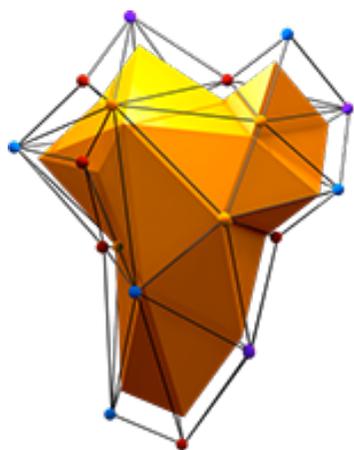
# CONEXIONES



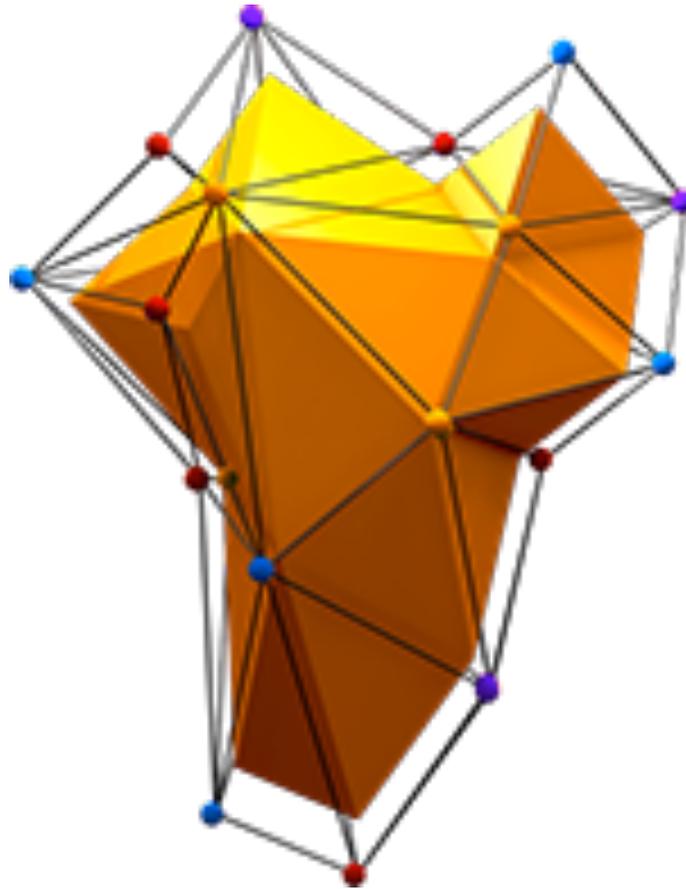
# CONEXIONES



# CONEXIONES



INNOVACION ?



Gracias por  
colaborar