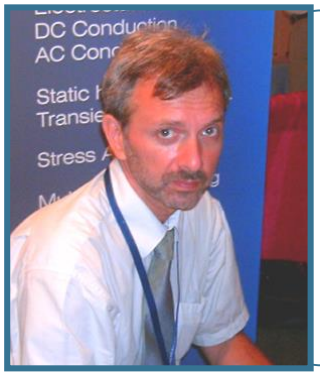
What's new in QuickField 6.1



Vladimir Podnos,
Director of Marketing and Support,
Tera Analysis Ltd.

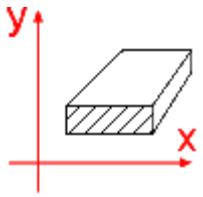
New features overview

Alexander Lyubimtsev
Support Engineer,
Tera Analysis Ltd.

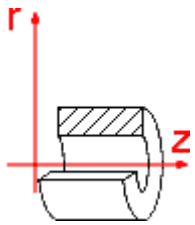
QuickField live demonstration

QuickField: before 6.0

Magnetic analysis suite	
Magnetic Problems	2D Magnetostatics
	2D AC Magnetics
	2D Transient Magnetics
Electric analysis suite	
Electric Problems	2D Electrostatics and 2D DC Conduction
	2D AC Conduction
	Transient 2D Electric field
Thermostructural analysis suite	
Thermal and mechanical problems	Steady-State 2D Heat transfer
	Transient 2D Heat transfer
	2D Stress analysis



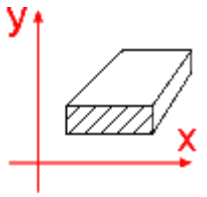
plane-parallel



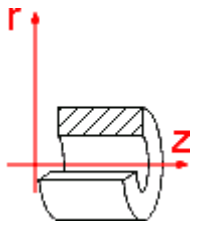
axisymmetric

QuickField 6.0

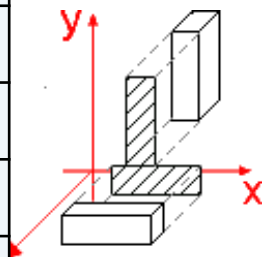
Magnetic analysis suite	
Magnetic Problems	2D Magnetostatics
	2D AC Magnetics
	2D Transient Magnetics
Electric analysis suite	
Electric Problems	2D Electrostatics and 2D DC Conduction
	3D Extrusion Electrostatics free preview
	2D AC Conduction
	Transient 2D Electric field
Thermostructural analysis suite	
Thermal and mechanical problems	Steady-State 2D Heat transfer
	Transient 2D Heat transfer
	2D Stress analysis



plane-parallel



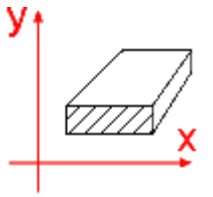
axisymmetric



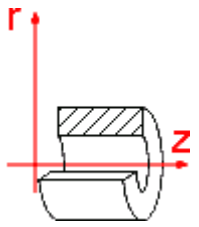
3D extrusion

QuickField 6.1

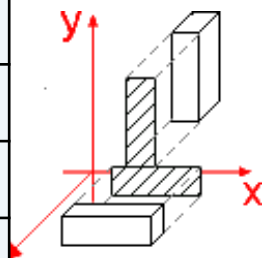
Magnetic analysis suite	
Magnetic Problems	2D Magnetostatics
	2D AC Magnetics
	2D Transient Magnetics
Electric analysis suite	
Electric Problems	2D Electrostatics and 2D DC Conduction
	3D Extrusion + 3D CAD Import Electrostatics
	2D AC Conduction
	Transient 2D Electric field
Thermostructural analysis suite	
Thermal and mechanical problems	Steady-State 2D Heat transfer
	Transient 2D Heat transfer
	2D Stress analysis



plane-parallel



axisymmetric



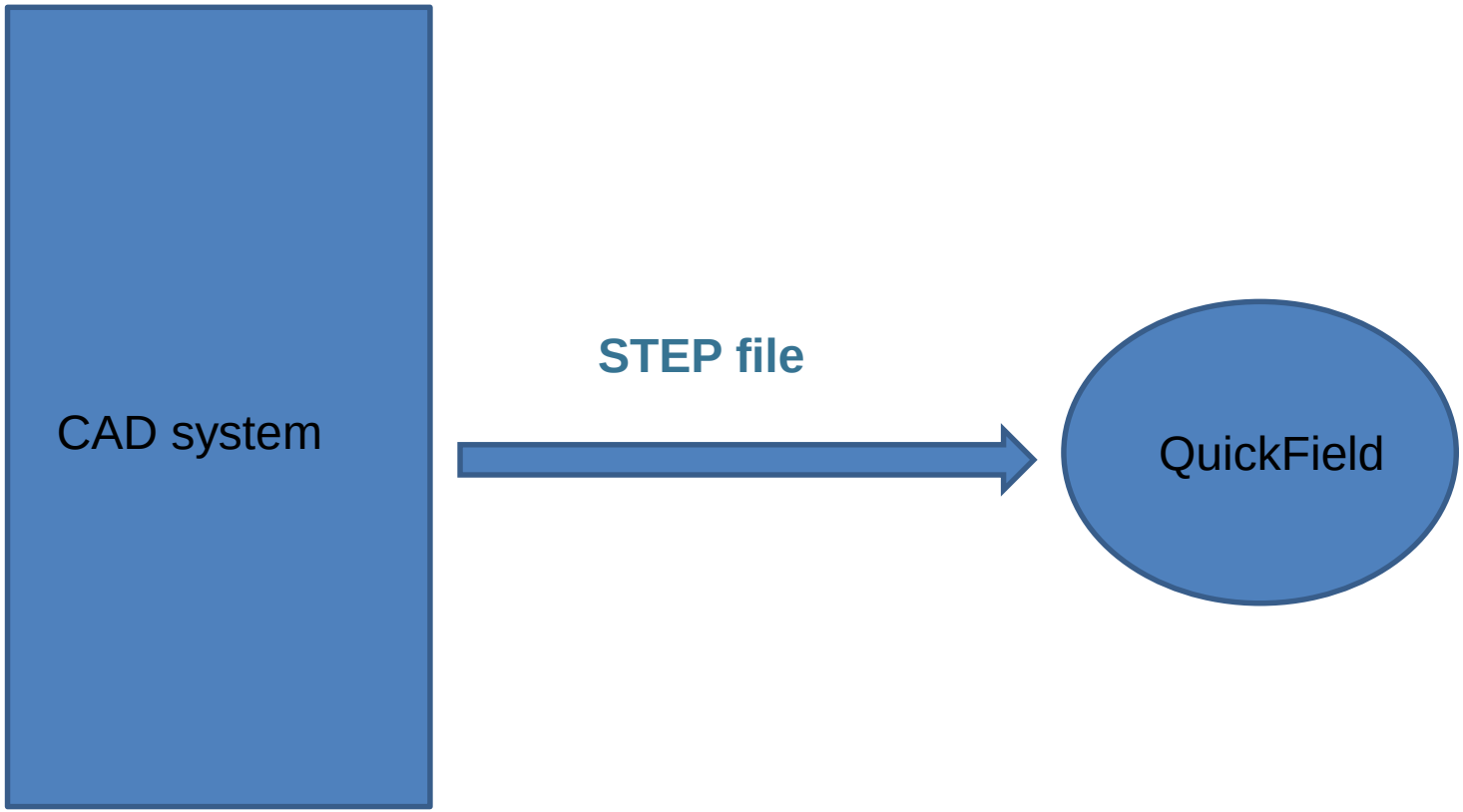
3D extrusion

3D geometry types

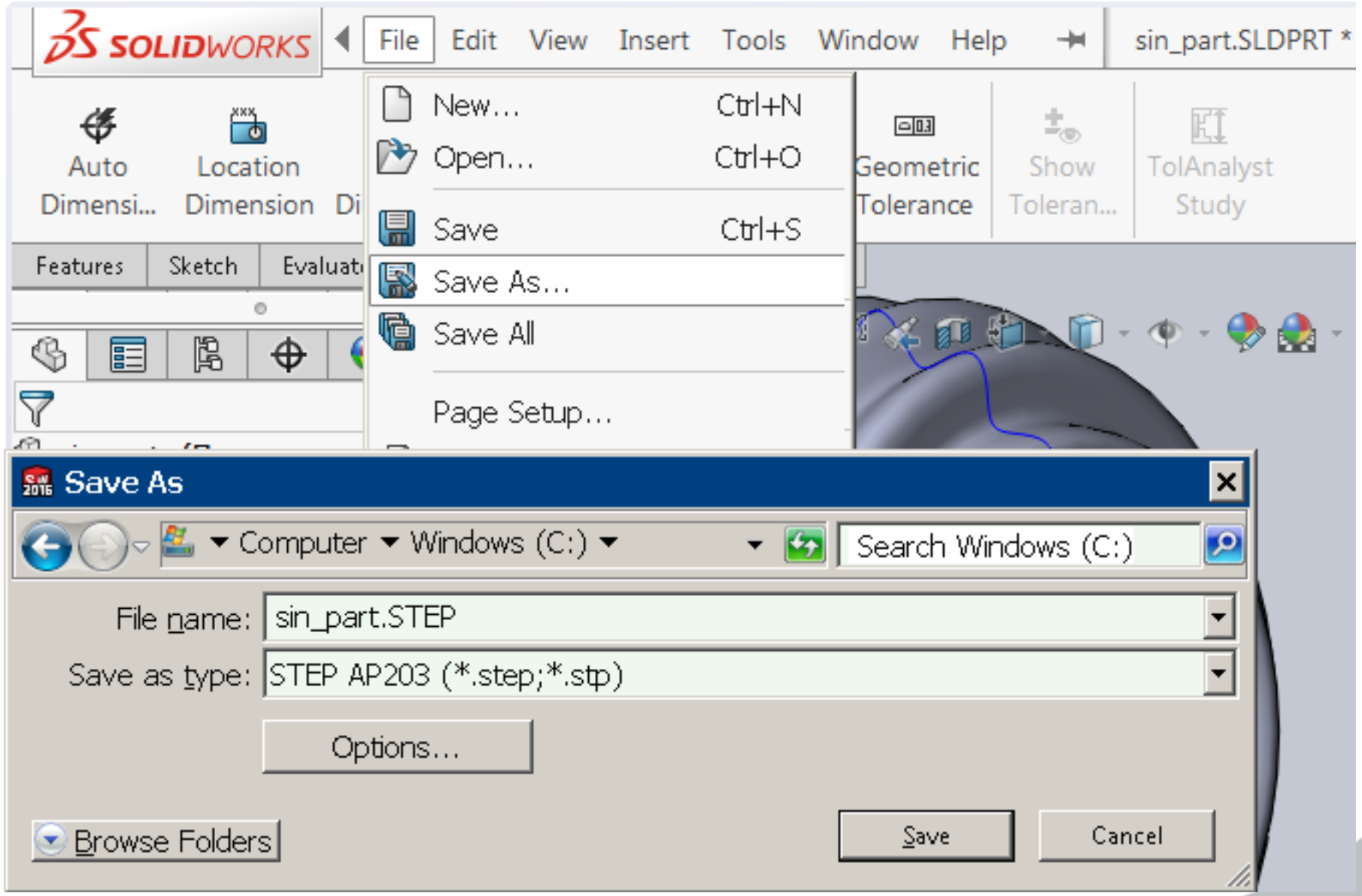
Can be extruded

Can not be extruded

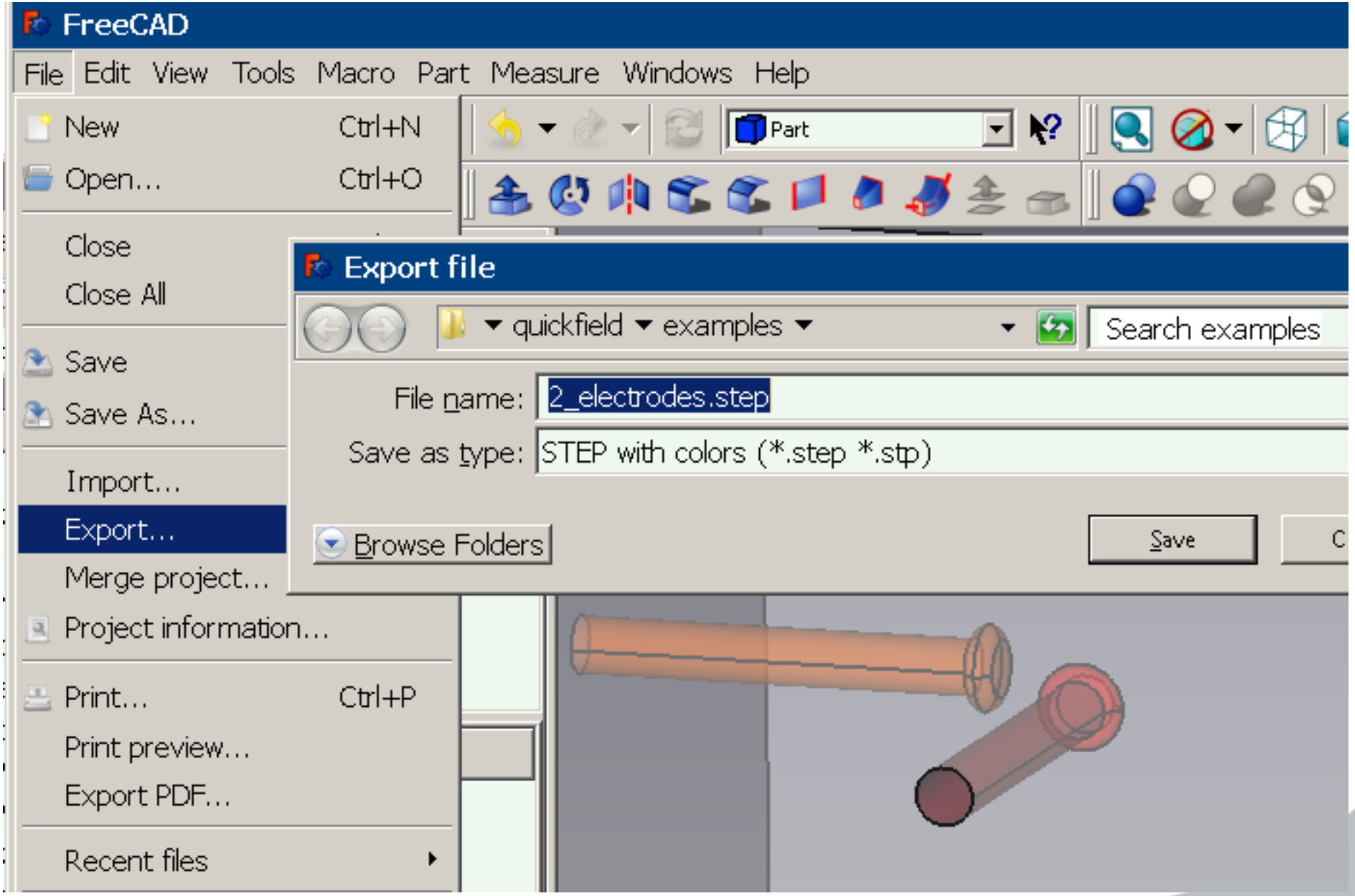
3D CAD model import



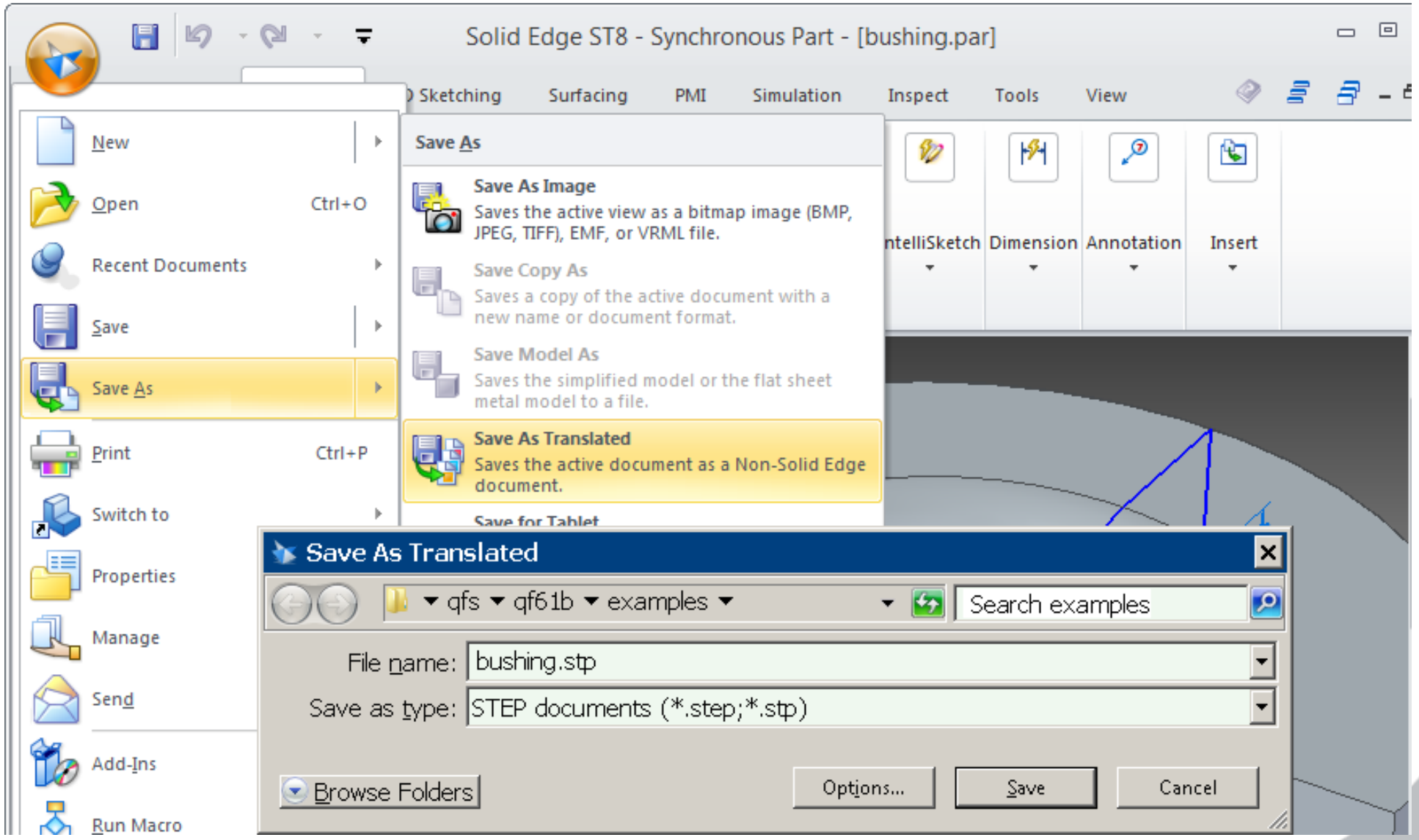
STEP file export from SOLIDWORKS



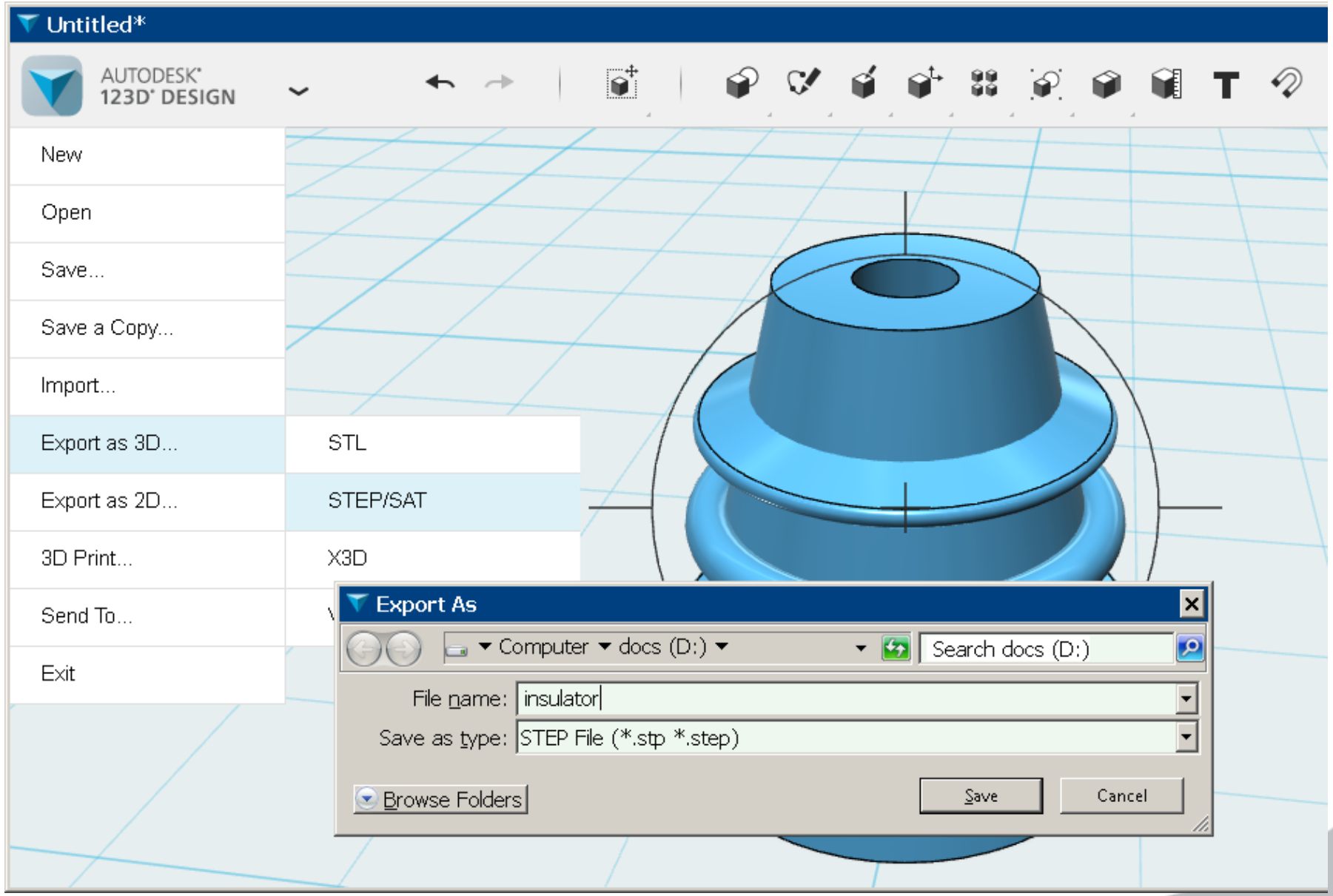
STEP file export from FreeCAD



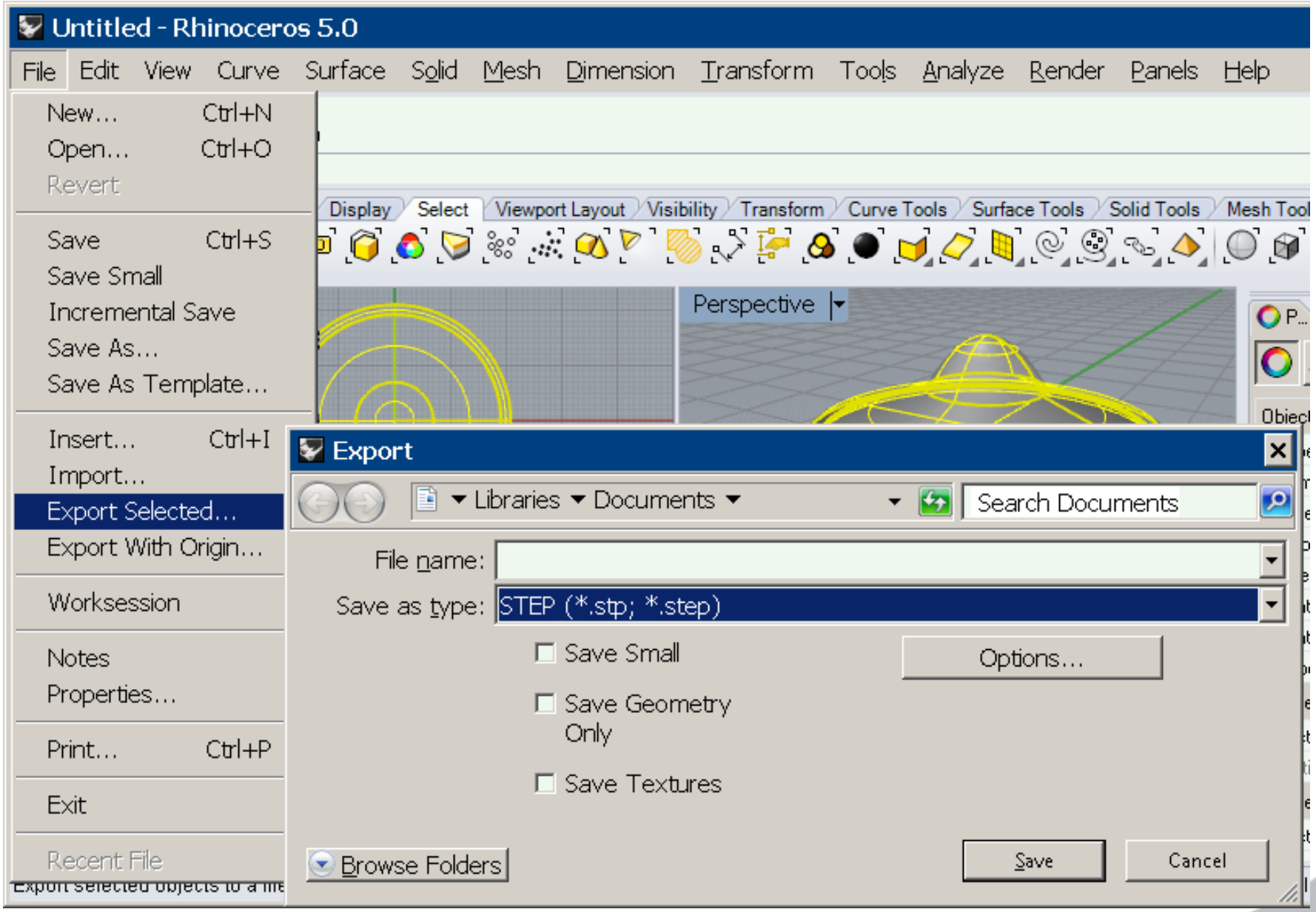
STEP file export from Solid Edge



STEP file export from AutoDesk 123D' Design

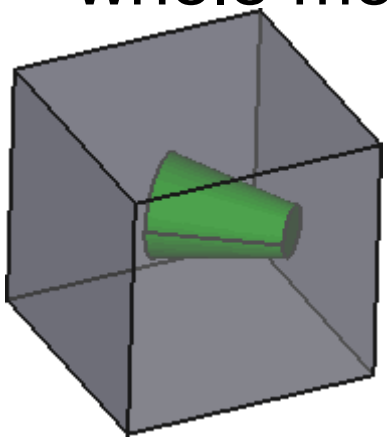


STEP file export from Rhino

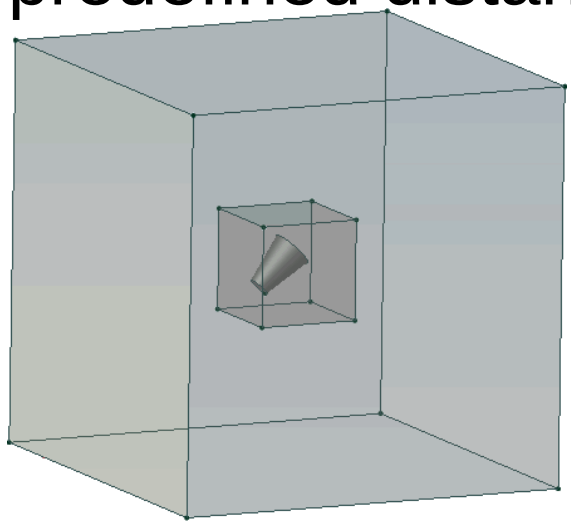


QuickField 3D CAD Import

- Compatibility with all major free and commercial CAD packages (SOLIDWORKS, Solid Edge, FreeCAD, Rhino etc.)
- STEP file import (ISO 10303)
- One body and multiple shells
- Background region (rectangular box) enclosing the whole model at the predefined distance



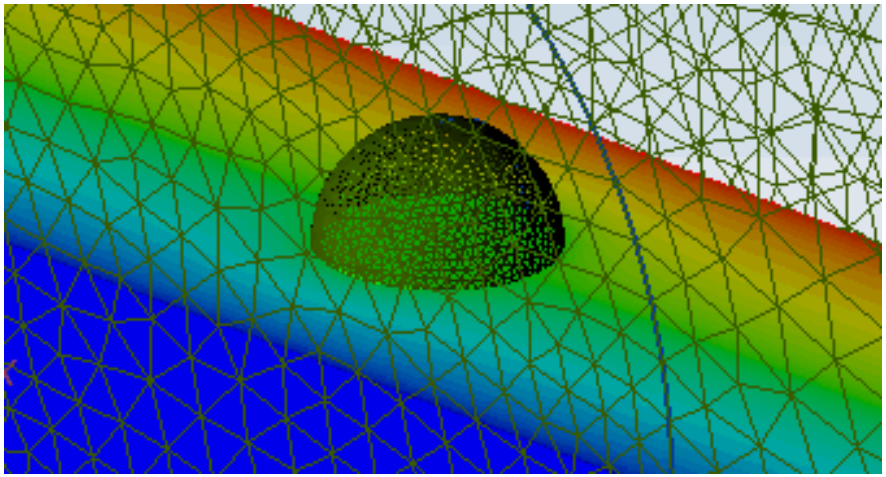
STEP file



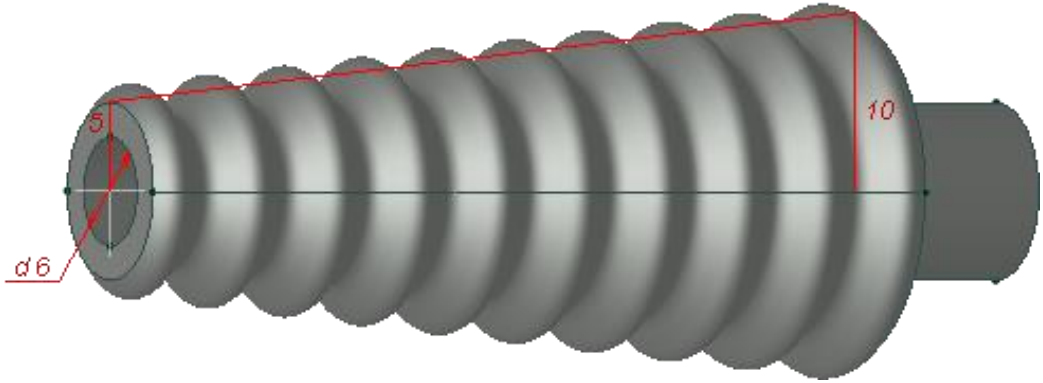
QuickField 3D geometry model

http://quickfield.com/glossary/3dimport.htm

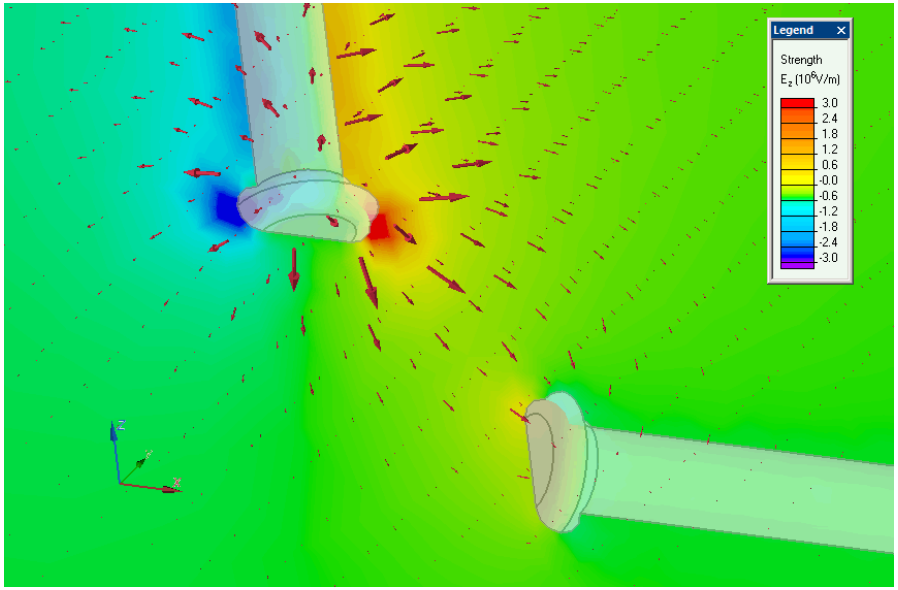
3D examples



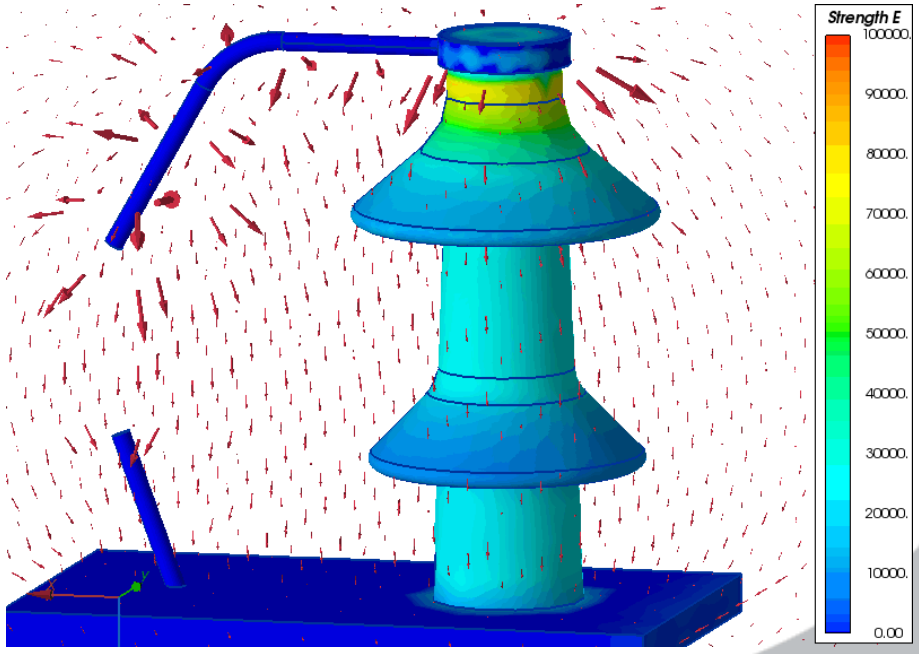
Conducting sphere inside plane capacitor



Bushing Insulator

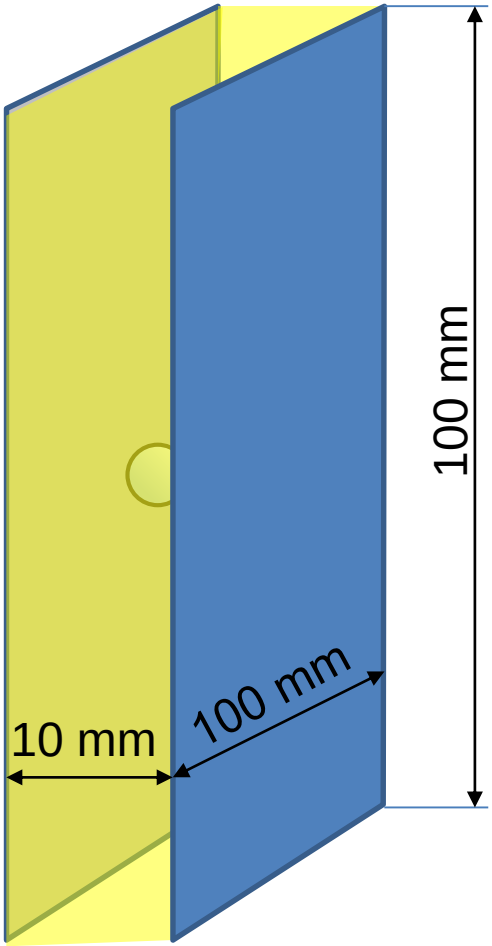


Two electrodes



Arcing horns

Conducting sphere inside plane capacitor



Problem specification:

Dielectric permittivity: $\varepsilon = 4$
Sphere radius r = 1 mm.

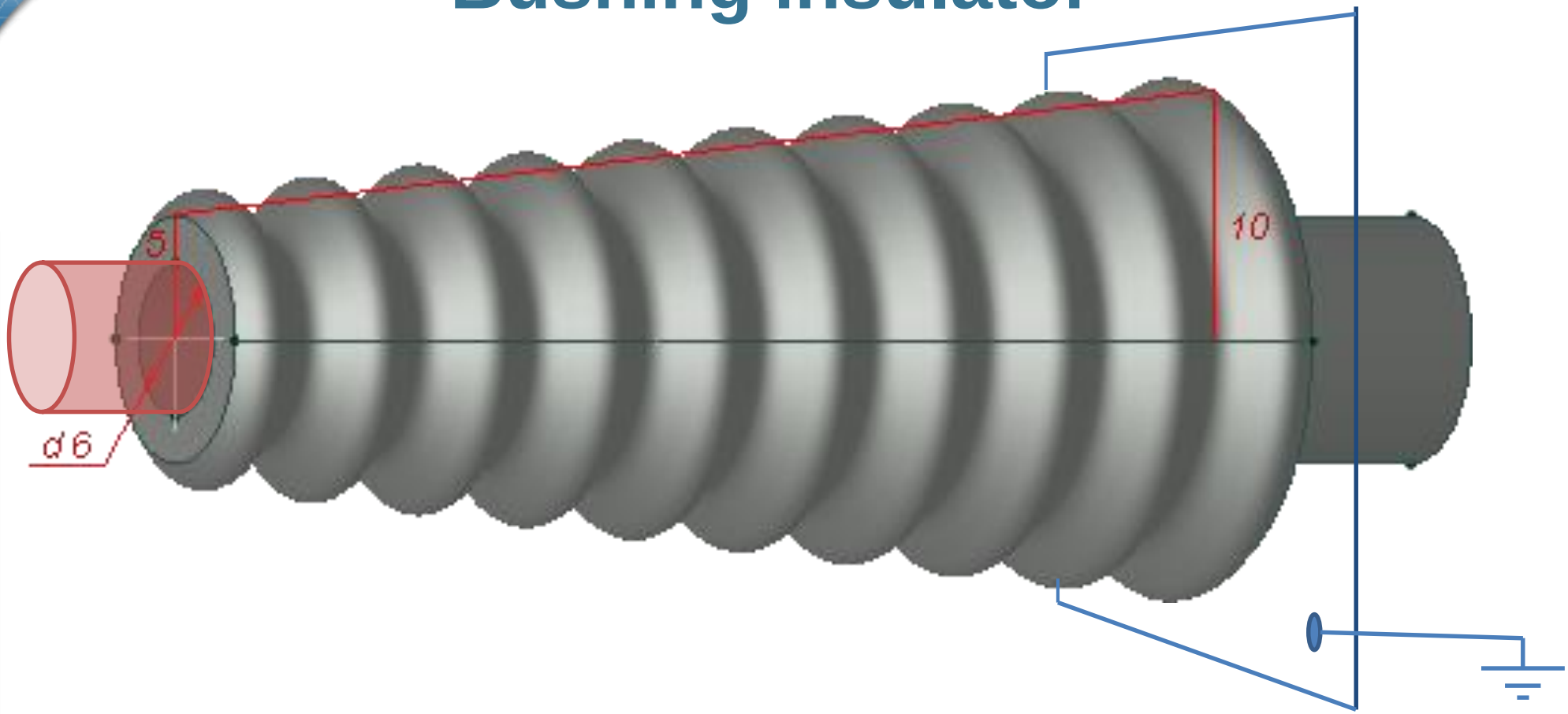
Task:

Calculate capacitance.

$C = \varepsilon \varepsilon_0 * A/d =$
$=4 * 8.8542 \text{ E-}12 * (0.01/0.01) =$
$= 3.5416 \text{ E-}11 \text{ [F]}$

http://quickfield.com/advanced/conducting_sphere_inside_capacitor.htm

Bushing insulator



Problem specification:

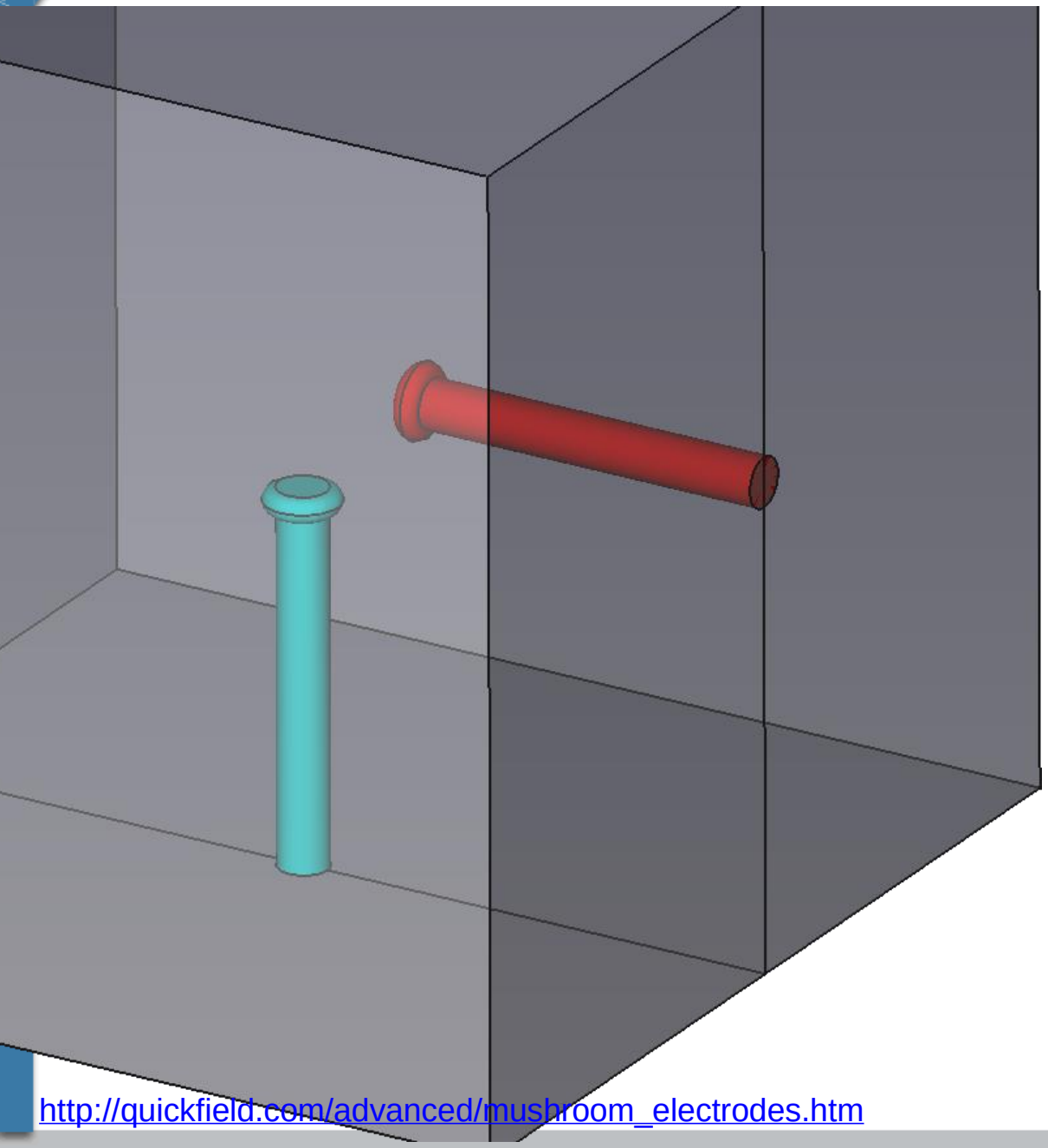
Dielectric permittivity: $\varepsilon = 2.2$
High voltage 10 kV

Task:

Calculate electric field stress distribution.

http://quickfield.com/advanced/corrugated_insulator.htm

Two electrodes



Problem specification:

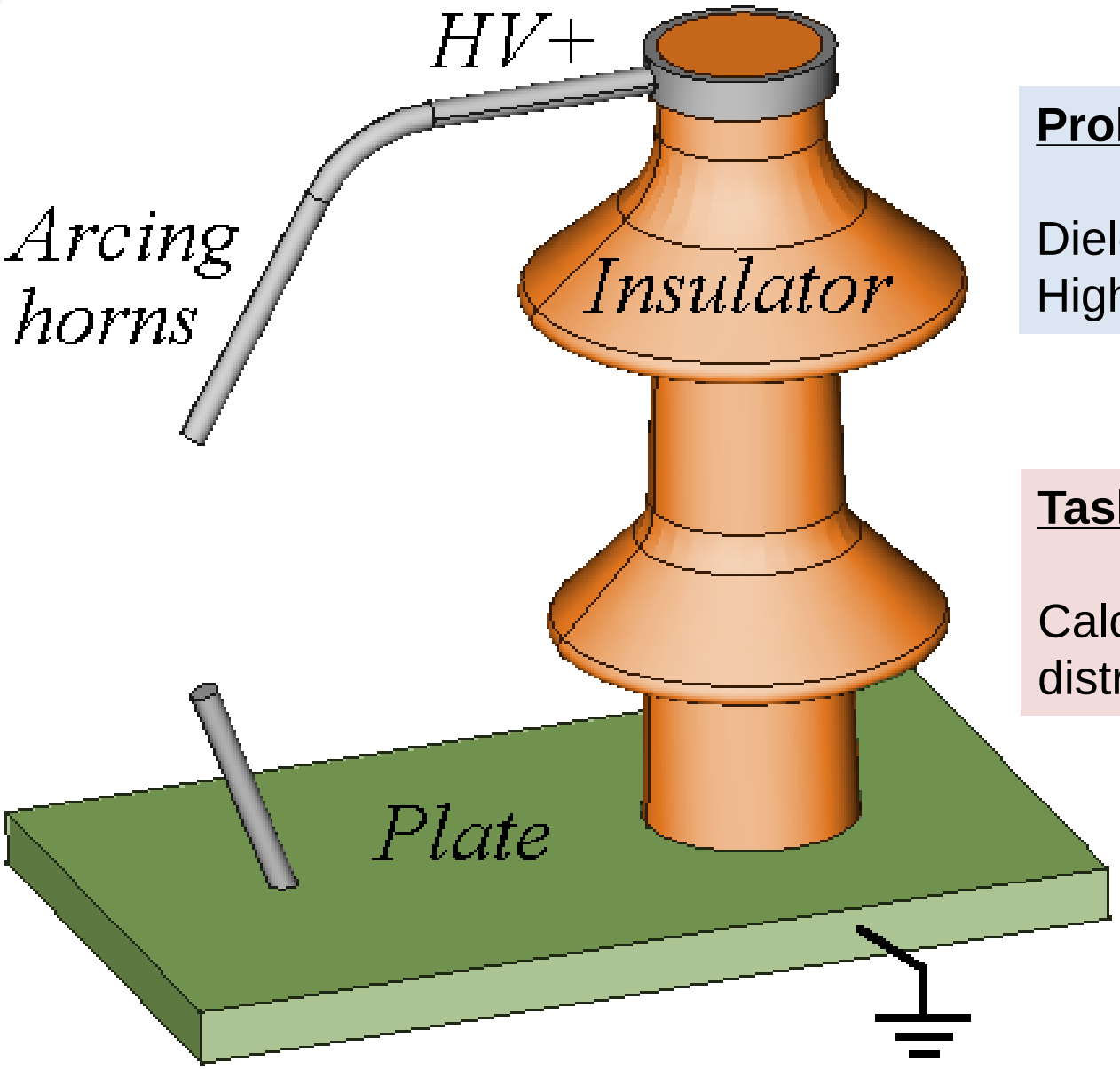
Air permittivity: $\varepsilon = 1$;
Voltage applied 1 kV

Task:

Calculate electric field stress distribution.

http://quickfield.com/advanced/mushroom_electrodes.htm

Arcing horns



Problem specification:

Dielectric permittivity: $\varepsilon = 6$
High voltage 6 kV (RMS)

Task:

Calculate electric field stress distribution.

http://quickfield.com/advanced/arcing_horns.htm

QuickField 6.1 Editions

	QuickField Student Edition	*QuickField Lite Edition*	*QuickField Professional Edition*
Mesh size limit	2D: 255 nodes 3D: 4000 nodes	2D: about 4000 nodes 3D: No artificial restrictions	No artificial restrictions
Cost	**F R E E**	Online quote may be generated at QuickField.com>Product>Order	
License term	Permanent	per year	per year or permanent
Network licensing availability	single-user only	License permits **unlimited** number of concurrent QuickField sessions within a campus	Single-user and agreed number of floating network licenses are available
Licensing requirements	no restrictions	Academic only	No restrictions, however, commercial and academic licensing terms are different

QuickField 3D development plans

Bringing more types of analysis to 3D (Thermal, DC Conduction, Magnetic, Time-Harmonic, Transients...)