Summary / Plan as of 10/26

Case 1018a2

Modify local radius of curvature in u-v space
-method of translating u-v to ProE developed
-found to be difficult because sharp bends in 3d look ok in u-v
-tried using mapped circles as a template, not useful

Backup plan is to change curve in 3d, map to winding surface
- manual method introduces local curvature problems
- bend radius after mapping to ws is unpredictable
- version rev-1 complete but with local min radius <11-cm
- rev-2 in progress, using sketch on winding surface

Adjust coil twist for best fit to "smooth" shell prepared by M. Cole
- shell profile curves in progress

Merge tee and shell surfaces into integrated casting model

Case 1018a2 (original) coils and vacuum vessel


M1

M2

M3
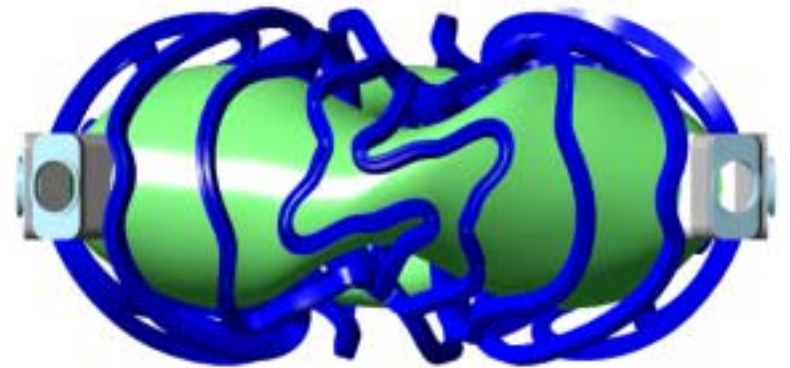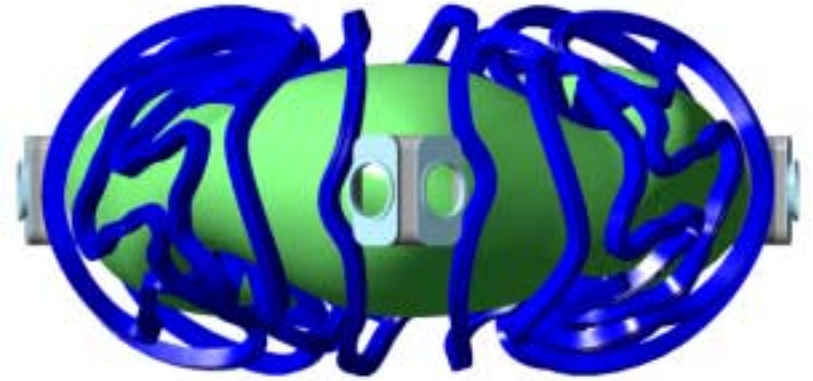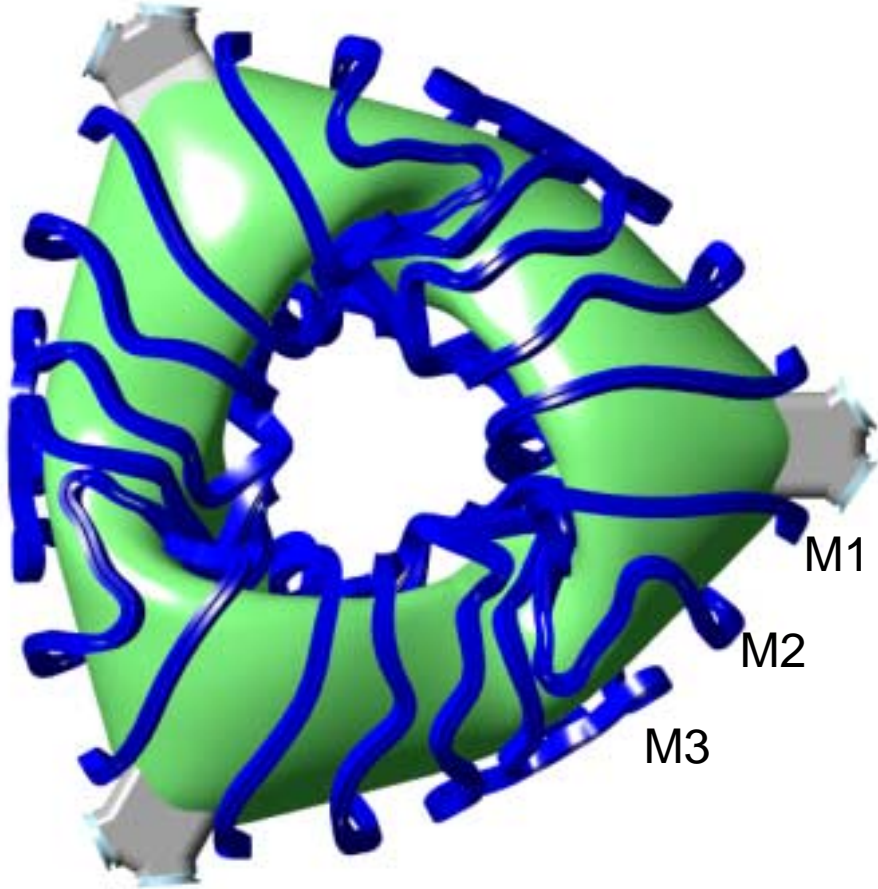
Case 1018a2 coil parameters

- Min coil-vessel distance is 9.2-cm (ok)

- Min coil-coil distance = 11.8-cm (ok with careful twist of xsec)

- Min bend radius = 9.7-cm (requires local modification)

Coil Position	Type	Length (m)	Min Rad (cm)	C-C Dist (cm)	C-V Dist (cm)	C-P Dist (cm)	Current (kA)	Avg Error (%)	Max Error (%)
Case 0918a17 (m25)								0.6	2.5
18	M1								
				12.4					
01	M1	7.2	9.6		0.5	20.2	625.0		
				12.0					
02	M2	7.2	9.4		5.8	19.4	595.0		
				12.0					
03	M3	7.2	9.6		9.9	23.1	565.0		
				14.2					
04	M3								
Case 0918a17r2 (modified)								1.1	8.1
18	M1								
				16.3					
01	M1	7.3	11.8		9.8	20.0	-		
				15.9					
02	M2	7.1	10.2		9.7	19.9	-		
				14.6					
03	M3	7.1	10.0		9.6	21.4	-		
				14.9					
04	M3								
Case 1018a2								0.9	3.7
18	M1								
				13.9					
01	M1	7.4	9.8		9.5	19.6	624.7		
				13.4					
02	M2	7.3	9.8		9.2	19.3	597.2		
				11.8					
03	M3	7.0	9.7		11.4	23.9	562.2		
				14.0					
04	M3								
Notes:									
Dimensions at room temperature (scale factor = 1.003435)									

Regions where bend radius < 11-cm
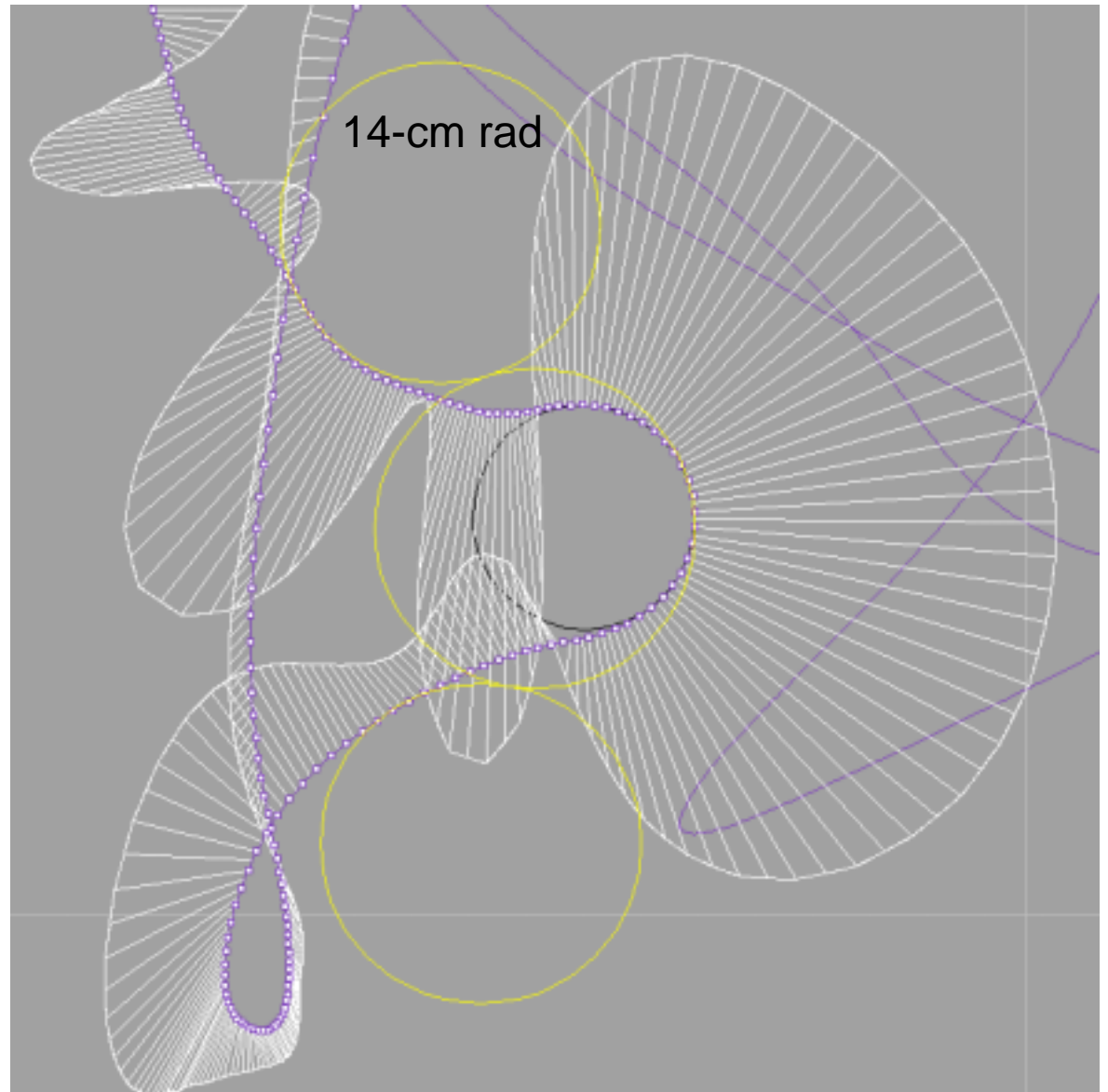
Regions in u-v space

D

C

B

A

u (pol)

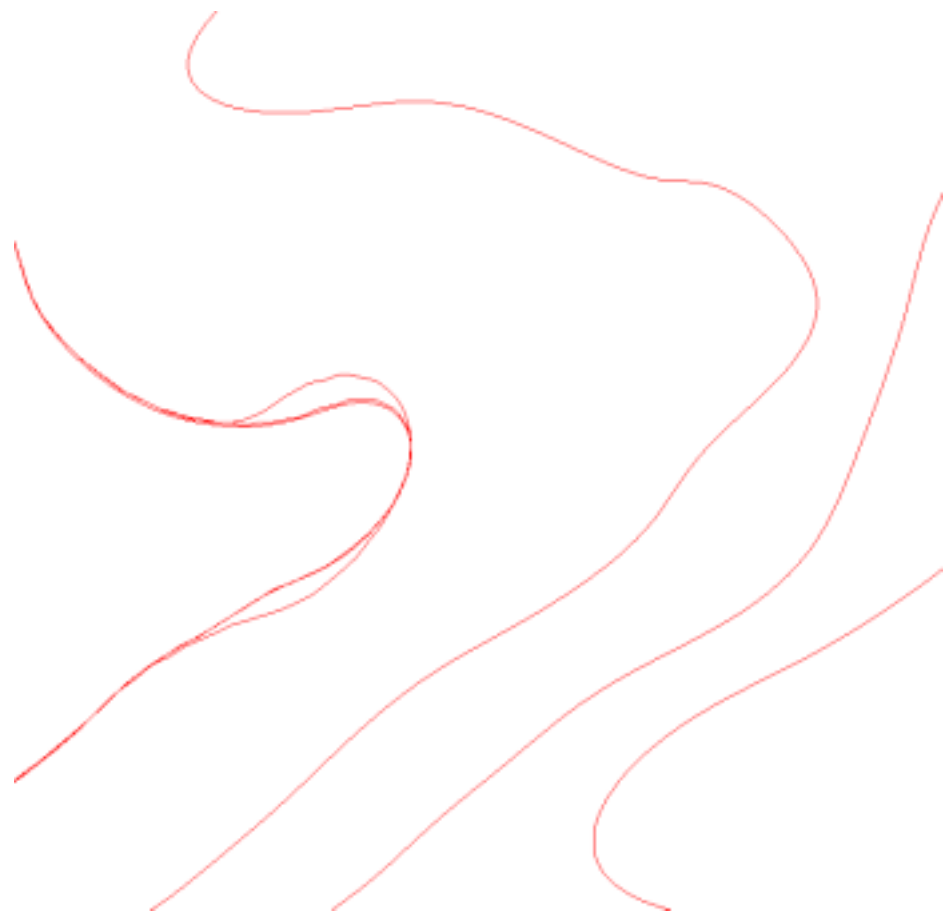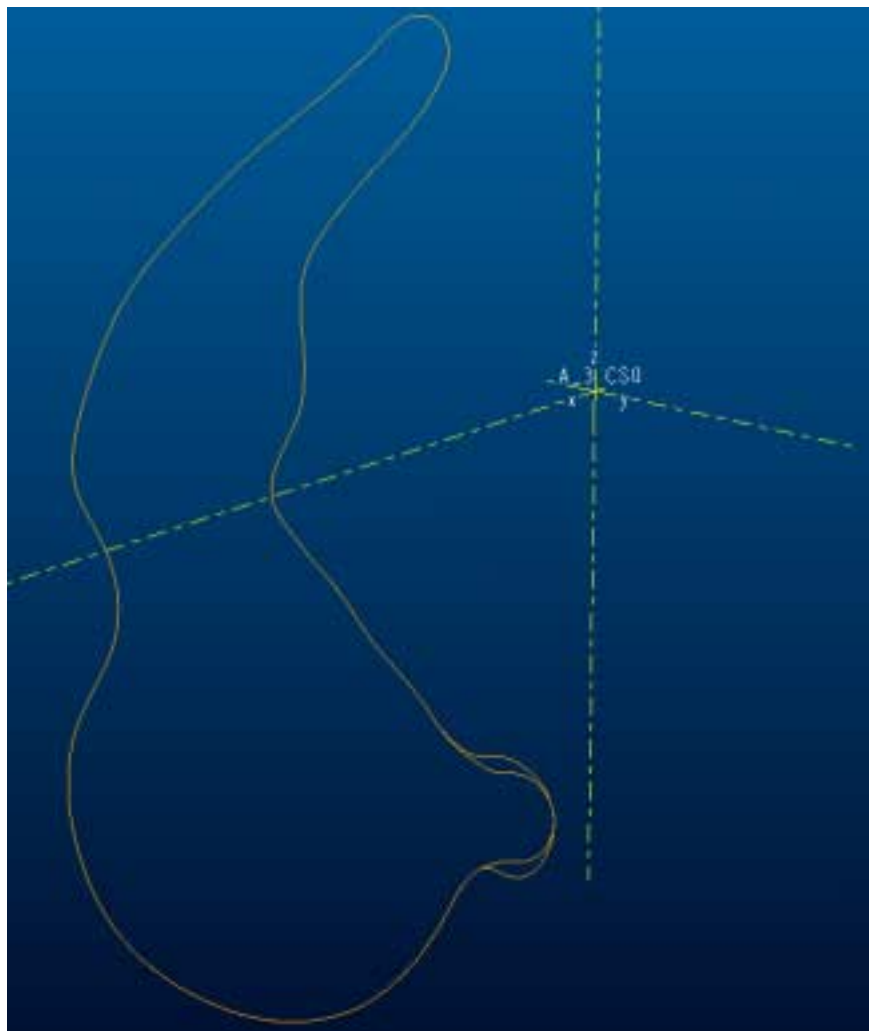M1 M2 M3

v (toroidal)
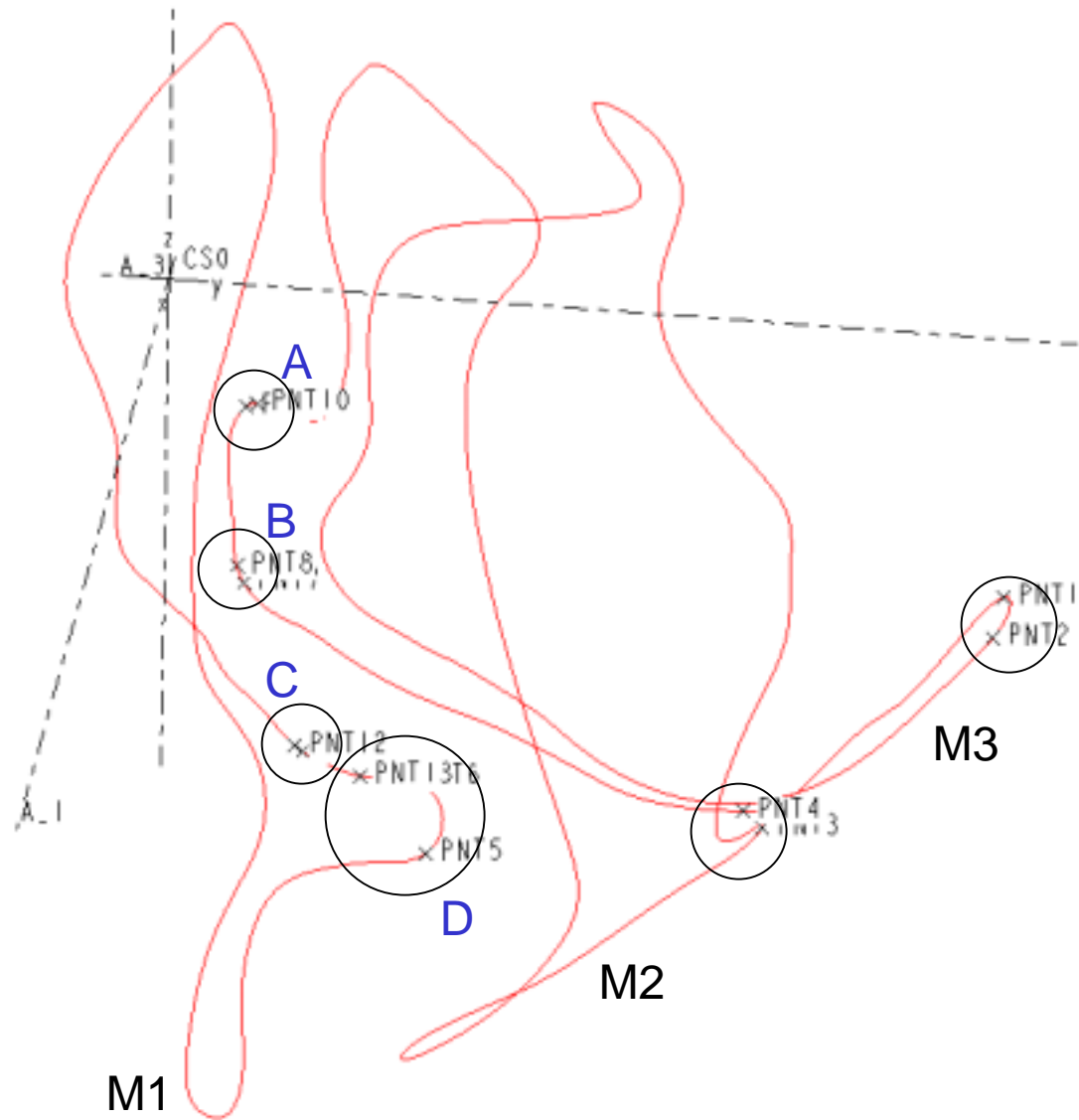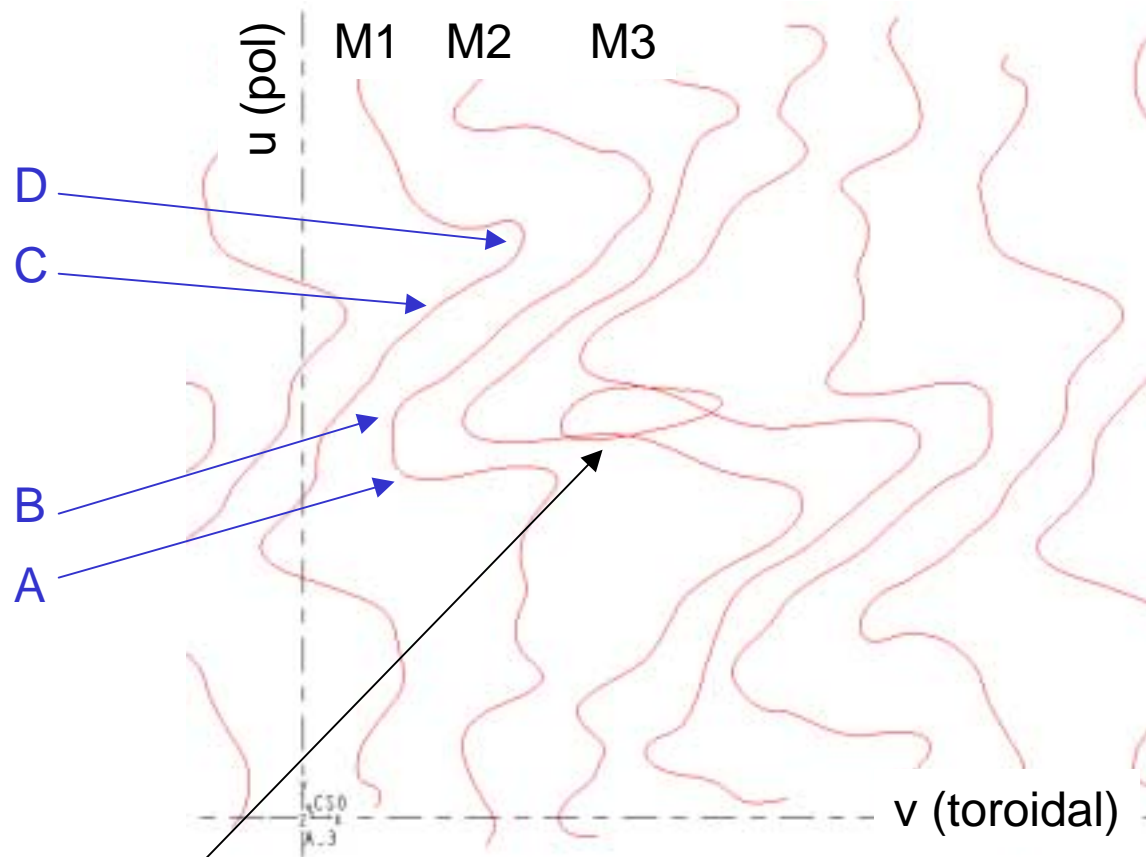
14-cm rad circle
mapped onto ws
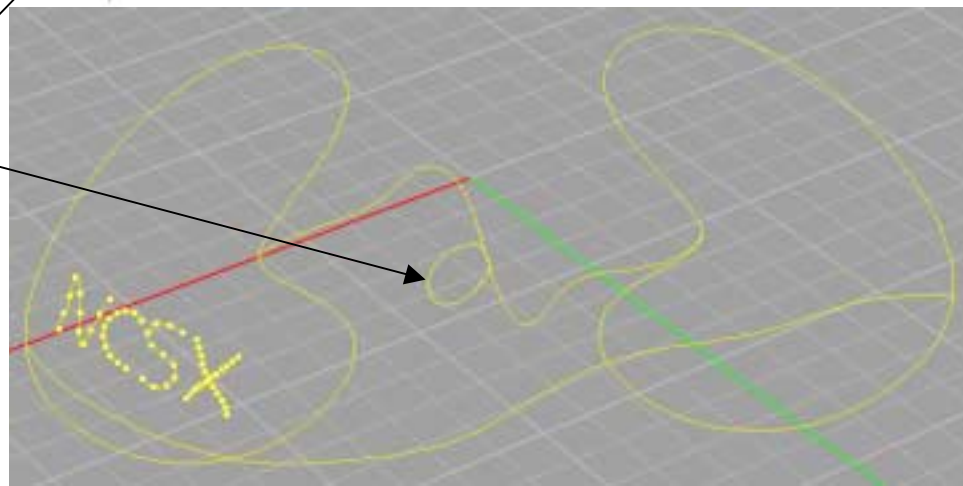
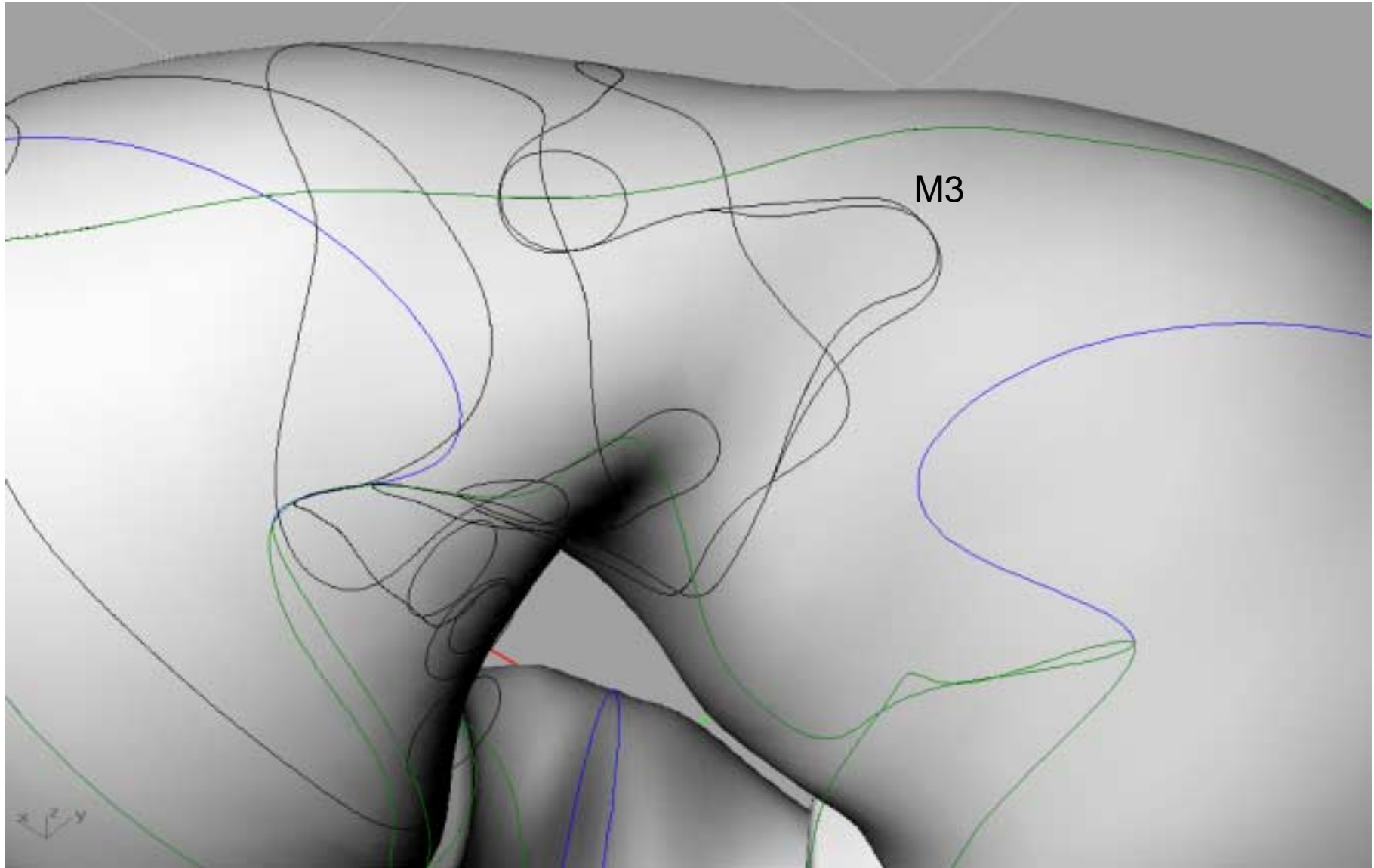# Manipulating coil M1 in 3D

14-cm rad

Modified curve for coil M1

u-v space

Coil M3 modified by sketching on winding surface

Summary / Plan

- Continue to modify curves directly on winding surface