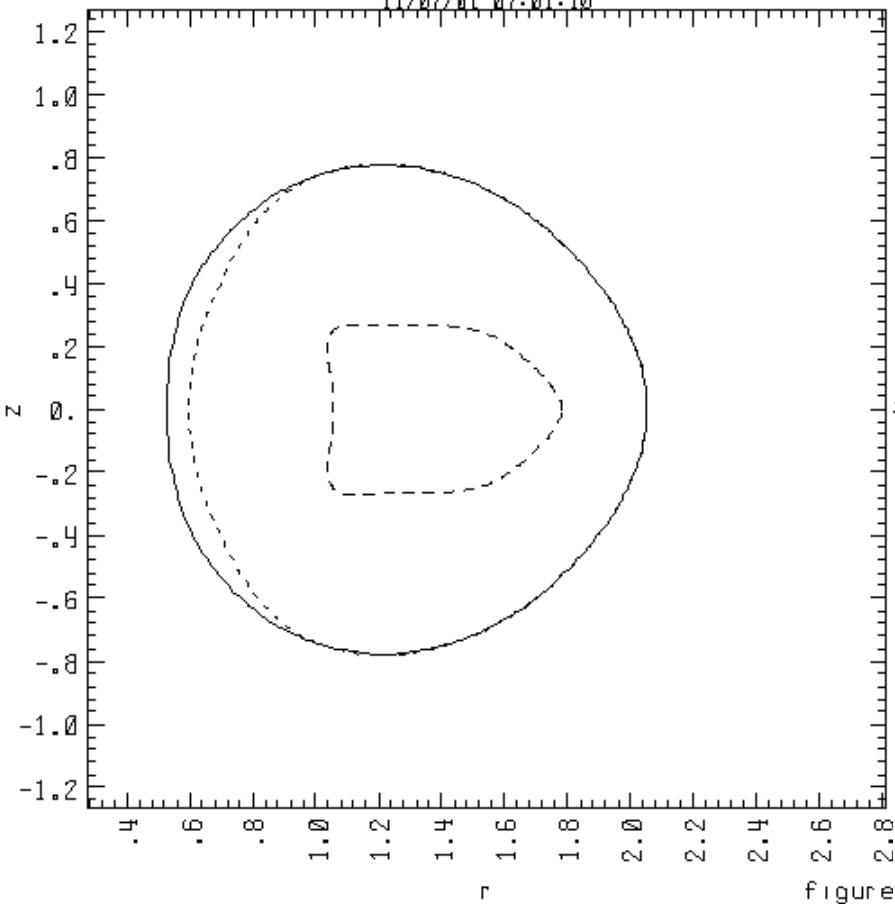


# Parallel Effort to Improve Engineering Properties of 1018a2 Coils

- Biggest Remaining Concern is with **Coil-Coil Separation**
  - Radius of Curvature of ~10 cm may be acceptable
- Use Tom's Smoothed Version of Dennis's Coilopt Winding Surface
  - windsurf110201
- Use Modified version of Tiltopt Code used in earlier background coil studies
  - Use Spline Representation of Modular Coils
  - Relax weighing of Field Errors
  - Added Smoothing Function
    - Targeting of Average Coil Curvature

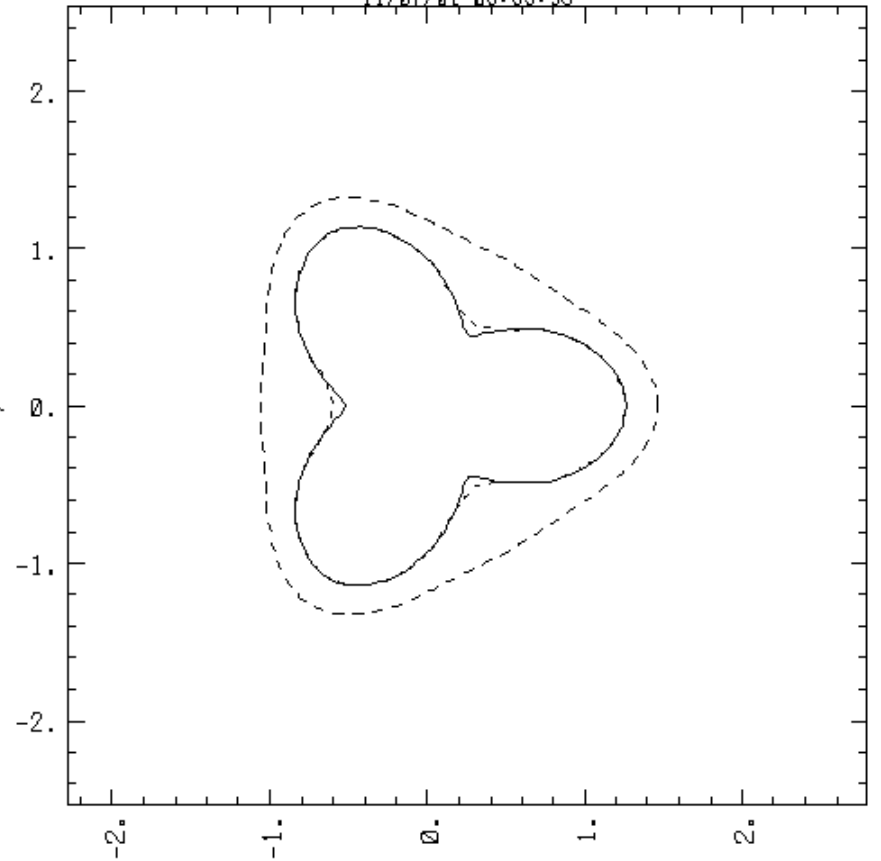
# Revised Winding Surface

windsurf101801 windsurf110201 plas.11383\_1.4 11/07/01 07:01:10 windsurf101801 windsurf110201 plas.11383\_1.4m 11/07/01 06:59:30



$V=0.5$

figure



$U=0.5$

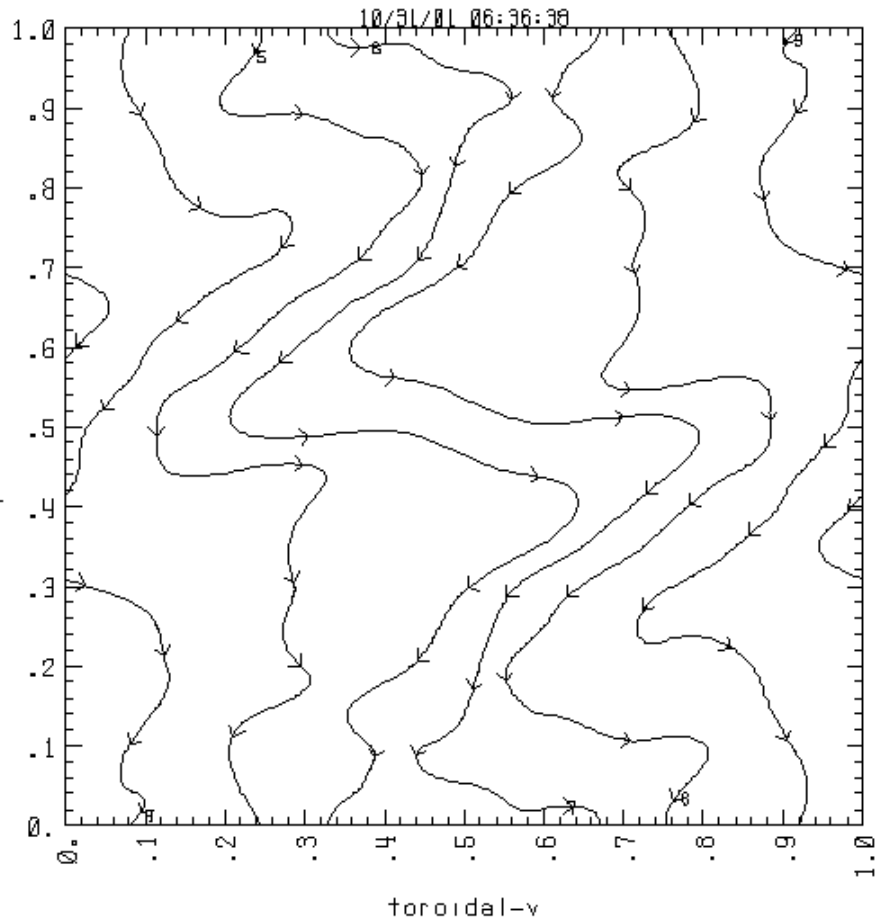
figure 6

# Summary of Coil Parameters

		110201	1018a2
Modular Coils per FP		6	6
Avg Field Error	%	1.31	0.92
Max Field Error	%	4.90	3.73
Min. Coil-Coil Separation	cm	15.5	11.8
Min. Plasma-Coil Separation	cm	?	19.7
Min Radius of Curvature	cm	9.8	9.6
Min NBI Access	cm	38.4	37.8
I-mod,1	kA	-575.8	-562.2
I-mod,2	kA	-675.8	-597.2
I-mod,3	kA	-528.1	-624.7
TF coil model		1/R	18 TF
TF current (total)	kA	-1180	-1196
I-pf,3	kA	1128	724
I-pf,4	kA	83.5	67.6
I-pf,5	kA	11.4	11.4
Modular coil representation		Spline	Fourier
Coil coefficients ( v/u)		40/40	30/30
Winding surface modes		179	179
Variables		247	373

# Comparison of 1018a2 and 110201

1018a2



110201

