Turbulence Intensity Comparisons for Pipes with/without Welds

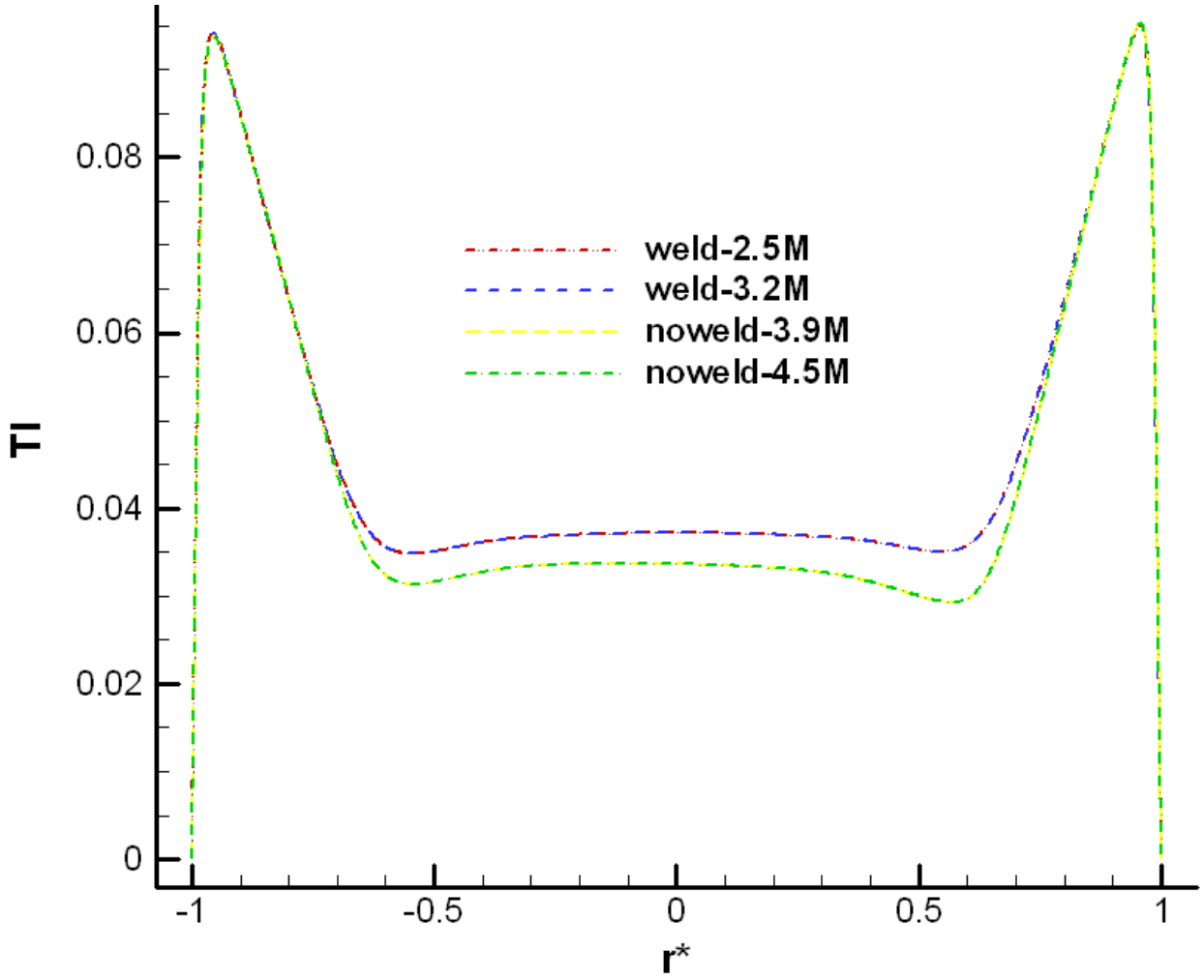
Oct. 24, 2012

Yan Zhan

Outline

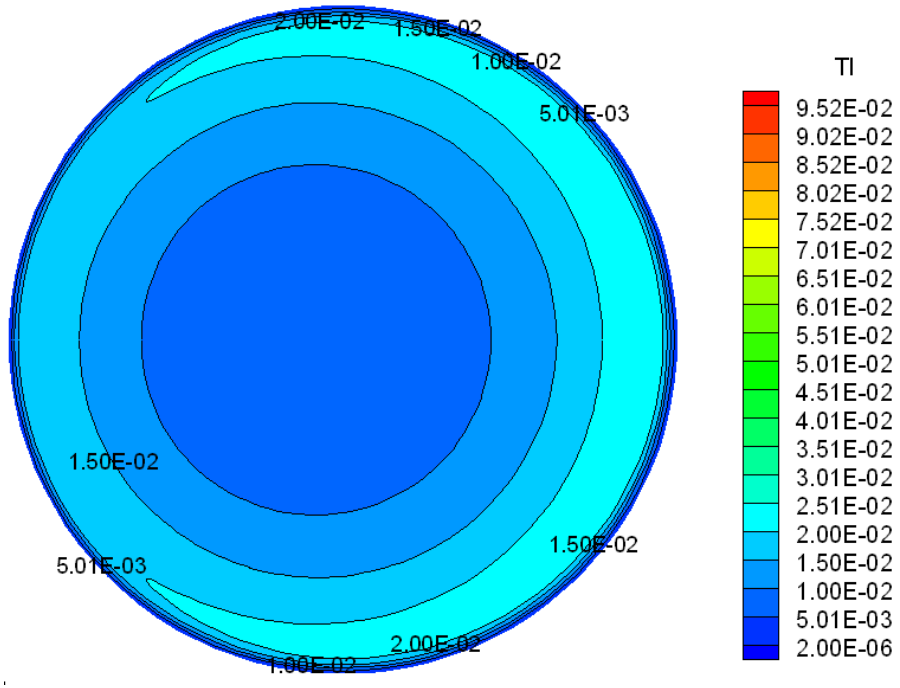
- Line Plot of TI at the Pipe Exit
- Contour of Turbulence Intensity (Page 4 - 9)
  - with a weld - 3.2M
  - with a weld – 2.5M
- Contour of Turbulence Intensity (Page 10 - 15)
  - with a weld - 3.2M
  - without a weld – 3.9M

Line Plot of TI at the Pipe Exit

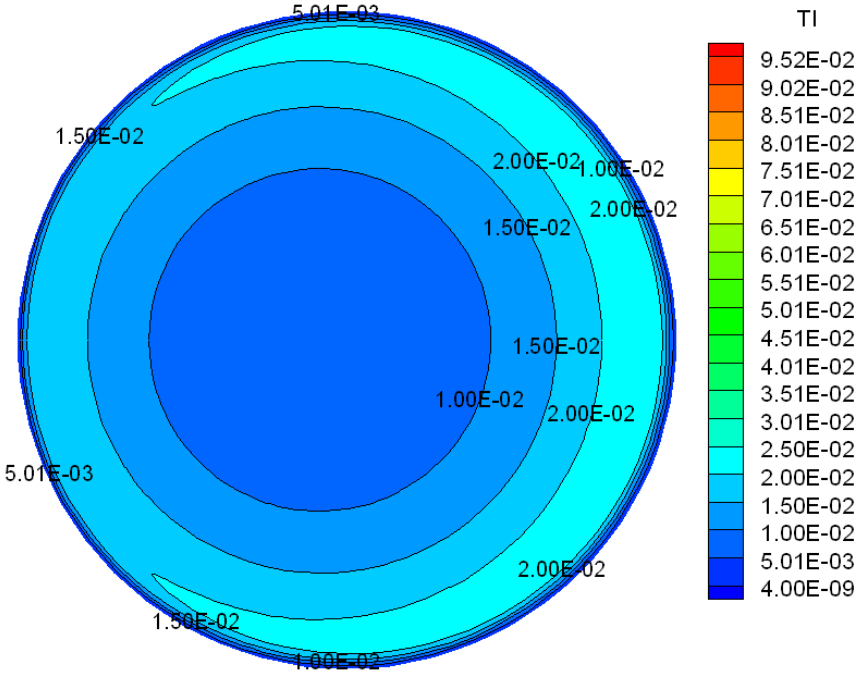


Contour of Turbulence Intensity (θ1 = 0)

(a-1) θ1 = 0 (with a weld - 3.2M)

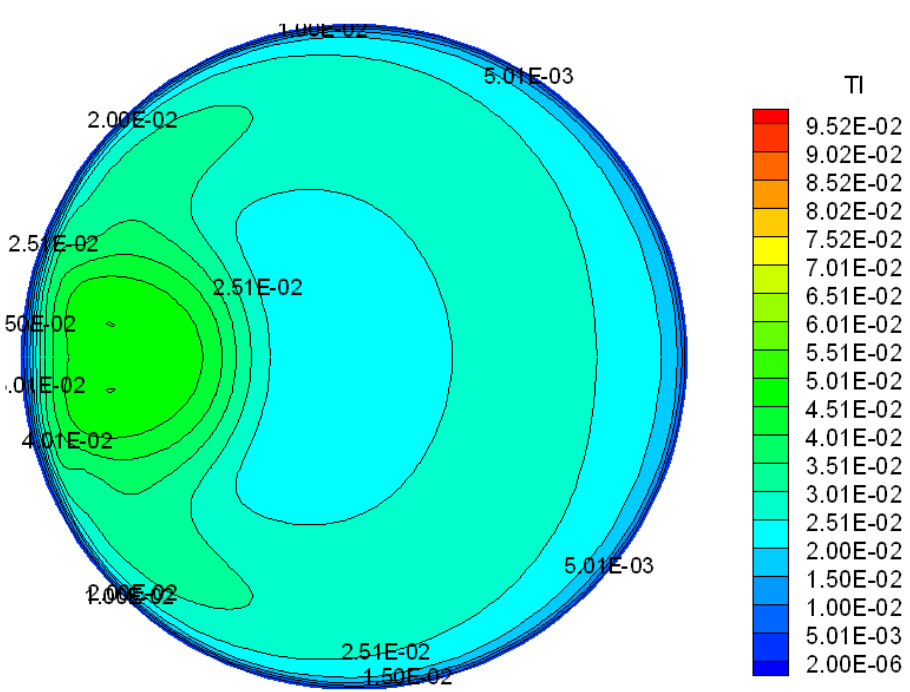


(b-1) θ1 = 0 (with a weld – 2.5M)

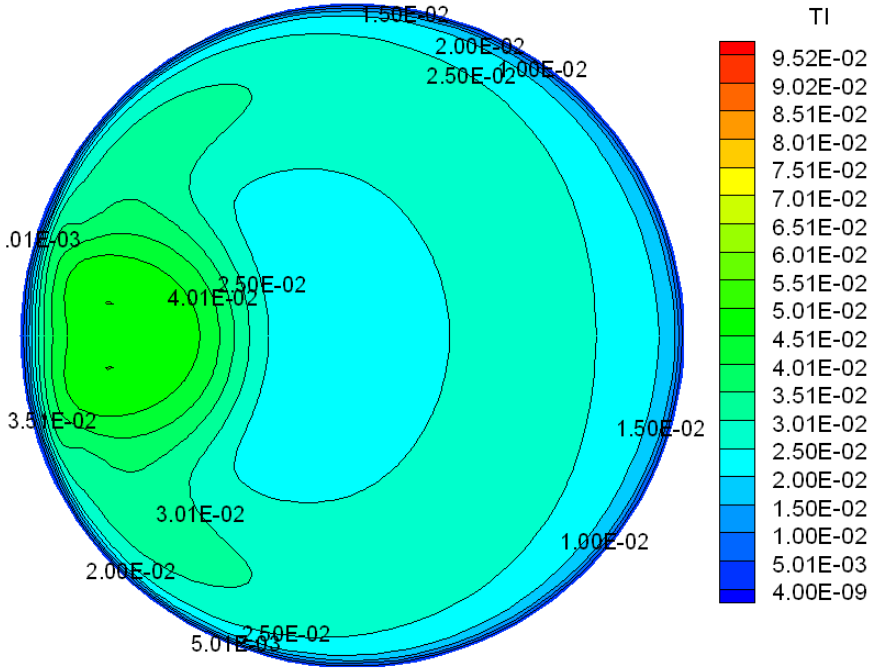


Contour of Turbulence Intensity (θ1 = 90)

(a-2) θ1 = 90 (with a weld - 3.2M)

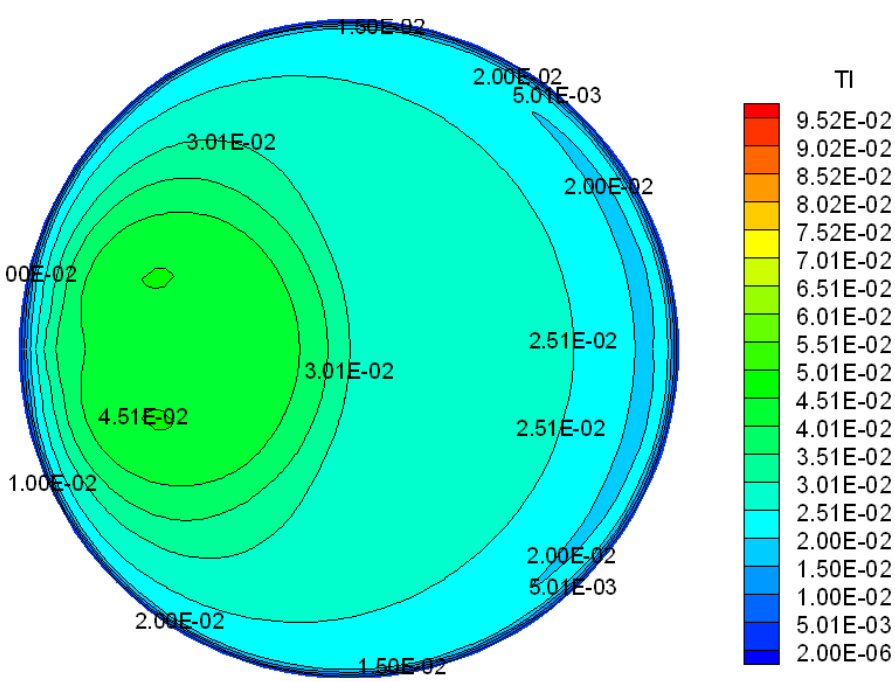


(b-2) θ1 = 90 (with a weld – 2.5M)

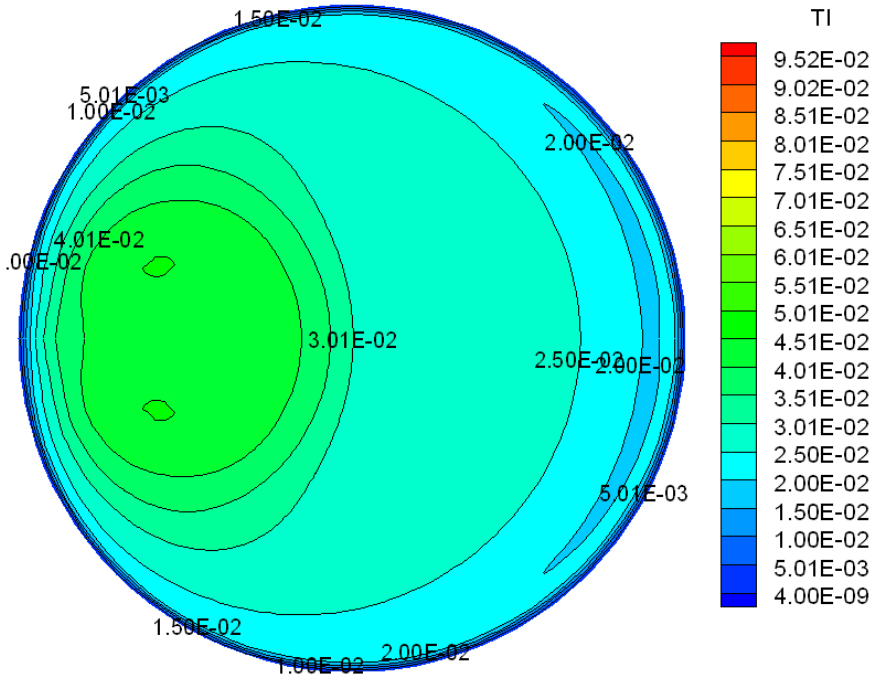


Contour of Turbulence Intensity (θ2 = 0)

(a-3) θ2= 0 (with a weld - 3.2M)

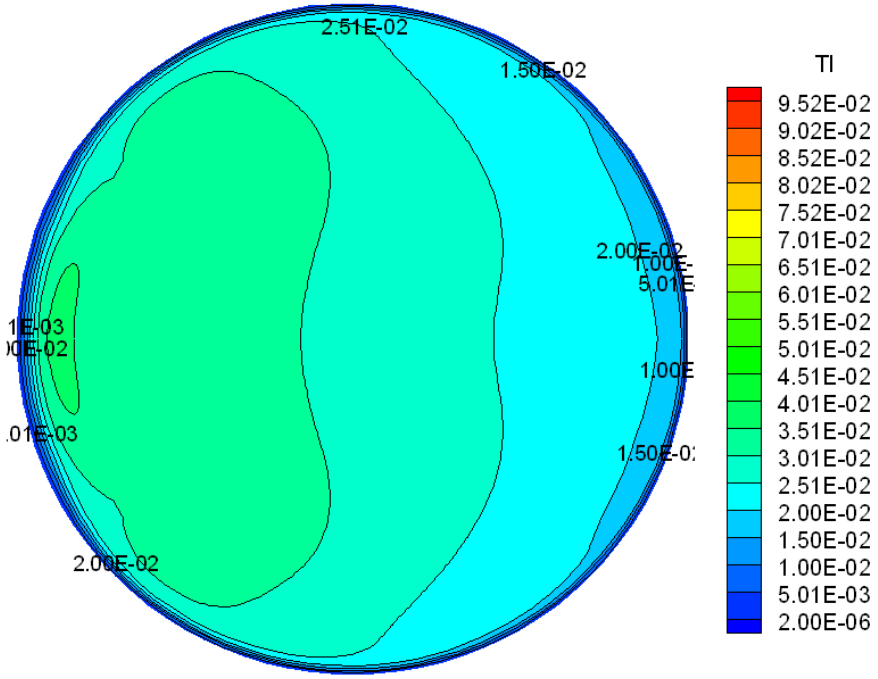


(b-3) θ2= 0 (with a weld – 2.5M)

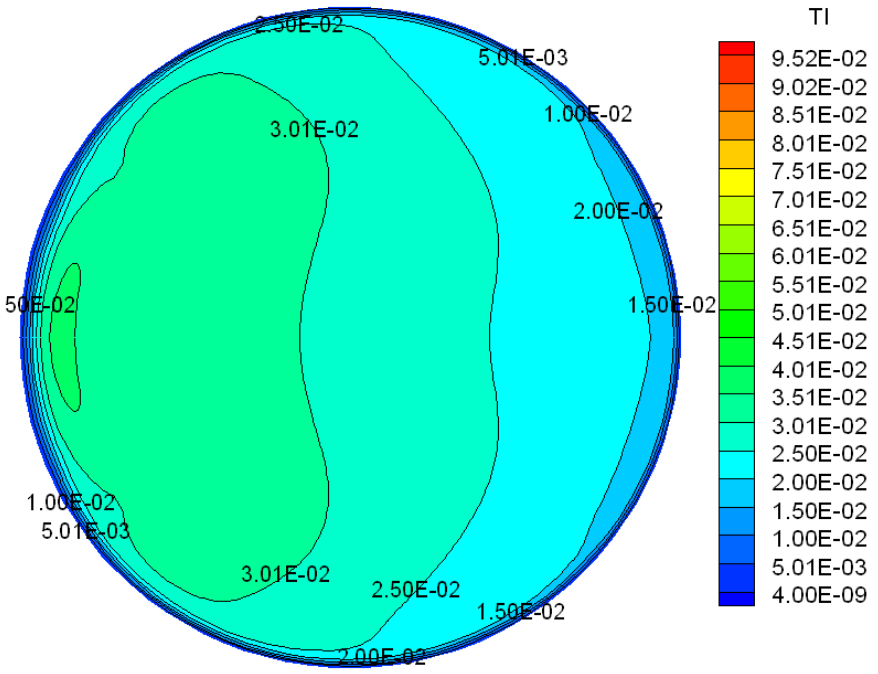


Contour of Turbulence Intensity (θ2 = 90)

(a-4) θ2 = 90 (with a weld - 3.2M)

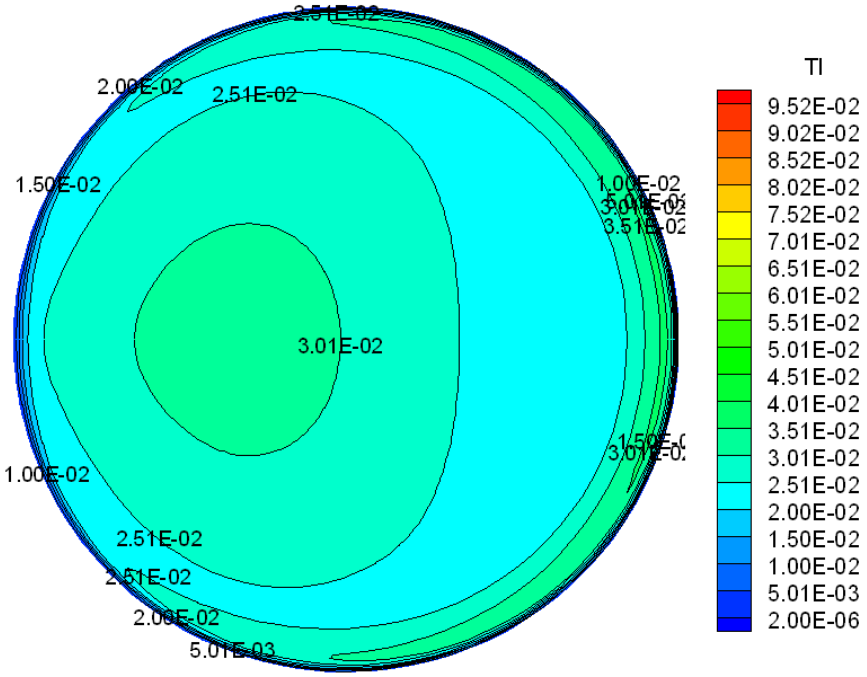


(b-4) θ2 = 90 (with a weld – 2.5M)

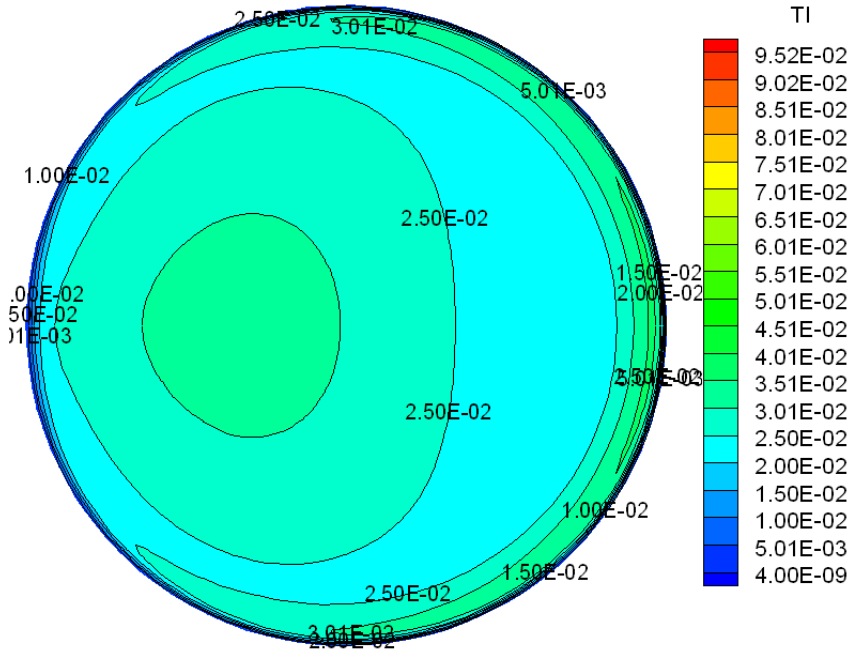


Contour of Turbulence Intensity (s= 3.36)

(a-5) s = 3.36 (with a weld - 3.2M)

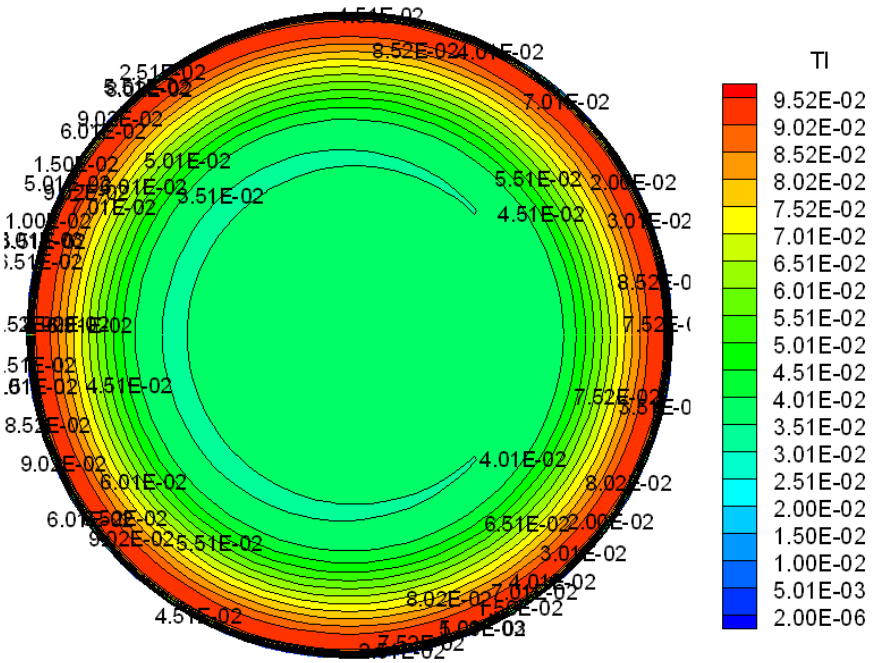


(b-5) s= 3.36 (with a weld – 2.5M)

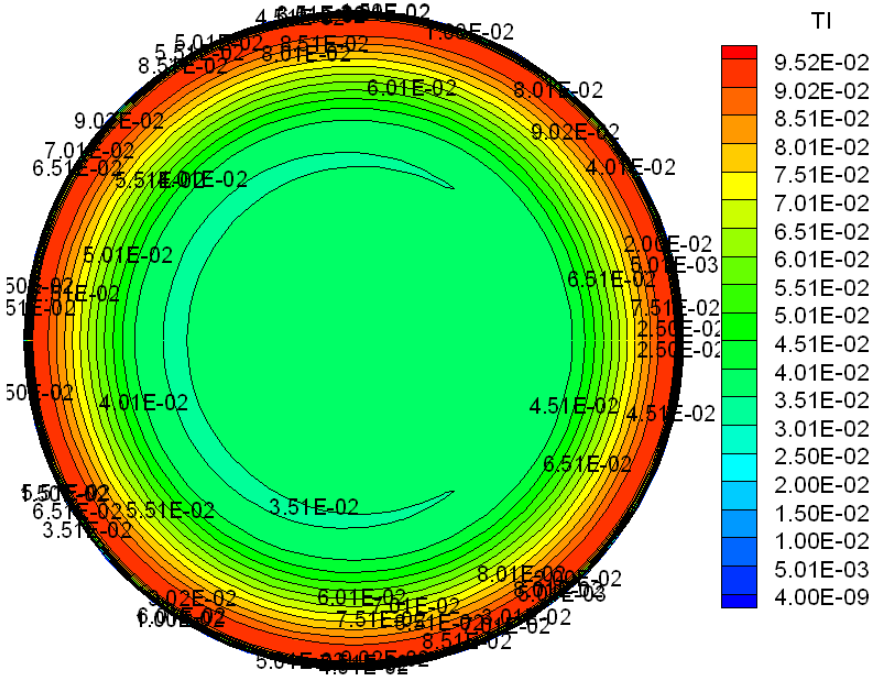


Contour of Turbulence Intensity (s= 8.3375)

(a-6) s = 8.3375 (with a weld - 3.2M)

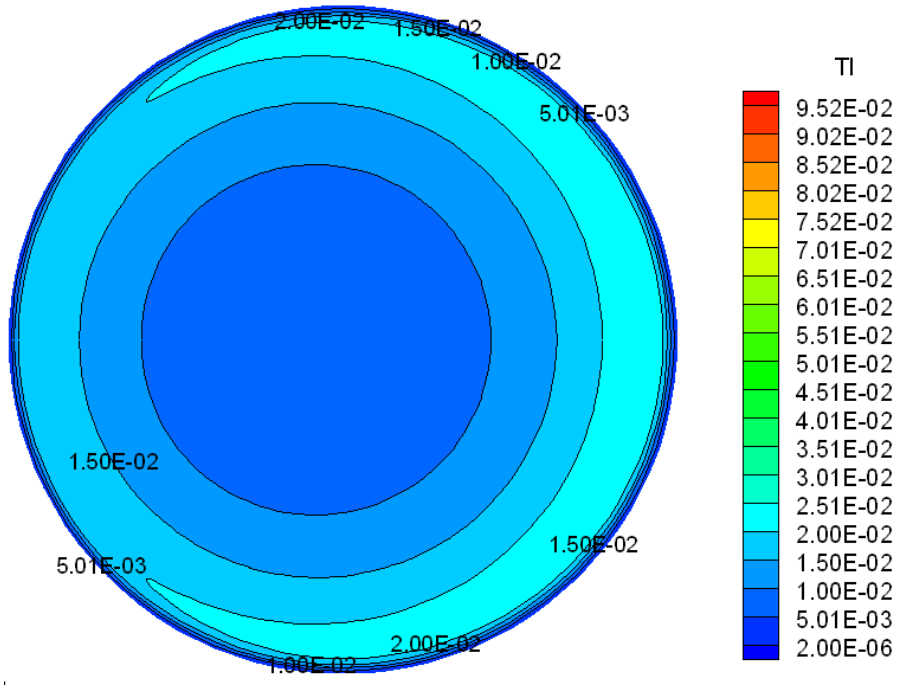


(b-6) s= 8.3375 (with a weld – 2.5M)

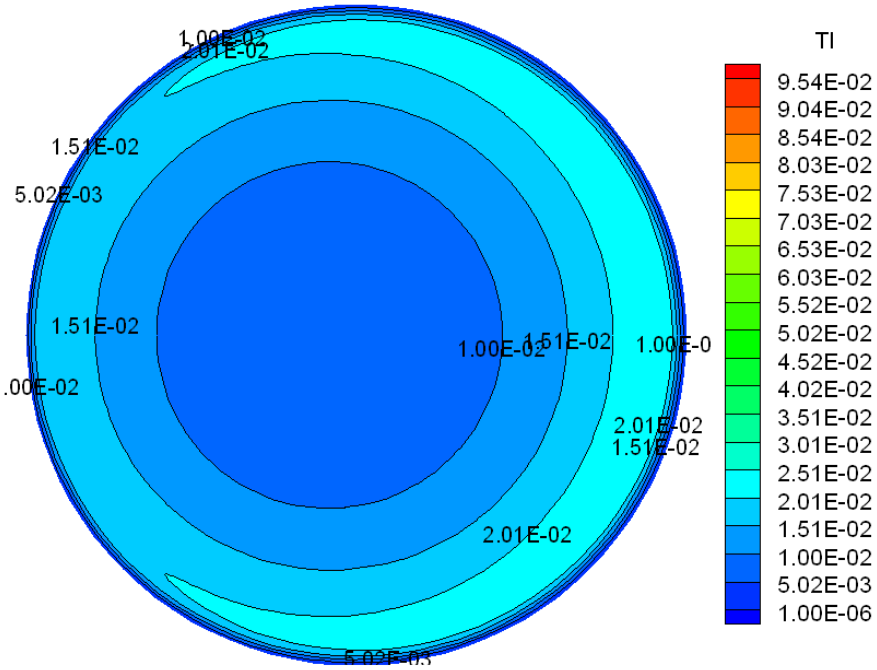


Contour of Turbulence Intensity (θ1 = 0)

(a-1) θ1 = 0 (with a weld - 3.2M)

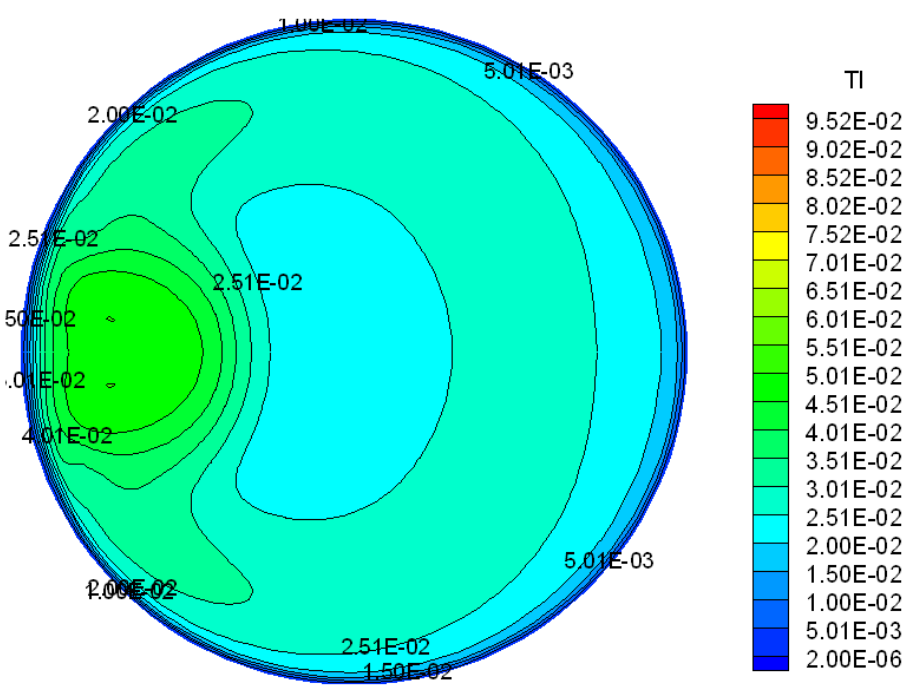


(b-1) θ1 = 0 (without a weld - 3.9M)

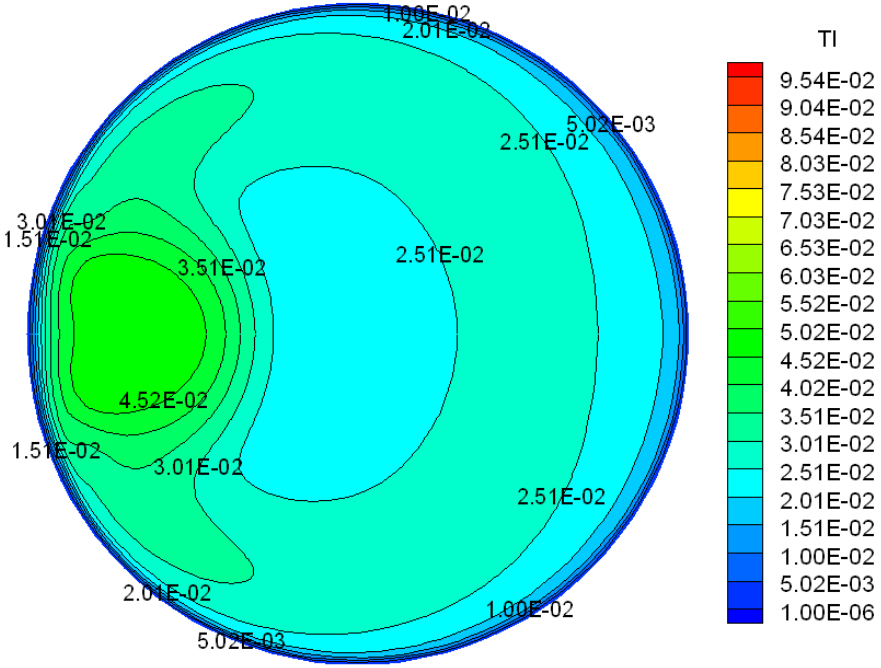


Contour of Turbulence Intensity (θ1 = 90)

(a-2) θ1 = 90 (with a weld - 3.2M)

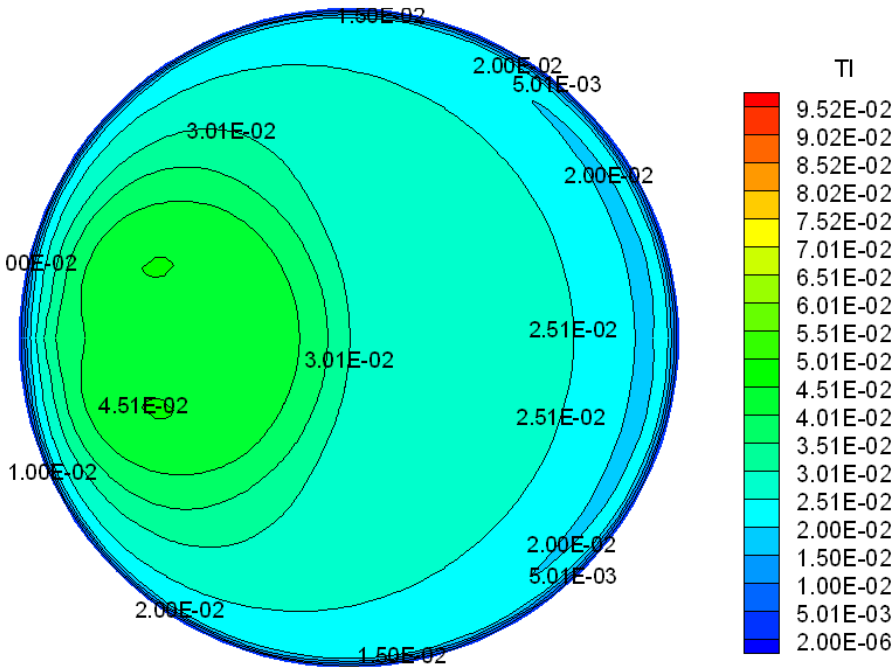


(b-2) θ1 = 90 (without a weld - 3.9M)

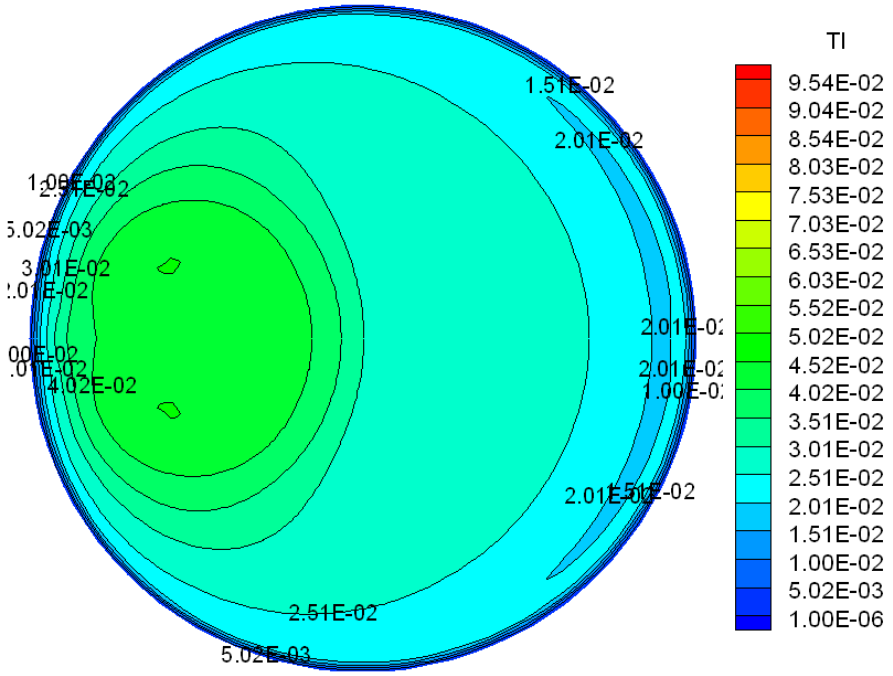


Contour of Turbulence Intensity (θ2 = 0)

(a-3) θ2= 0 (with a weld - 3.2M)



(b-3) θ2= 0 (without a weld - 3.9M)



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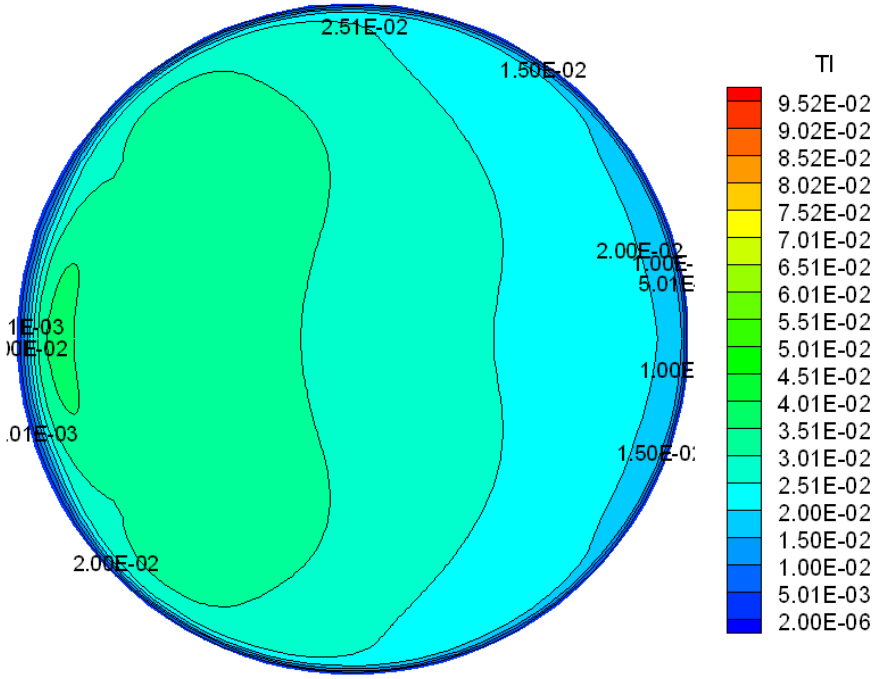

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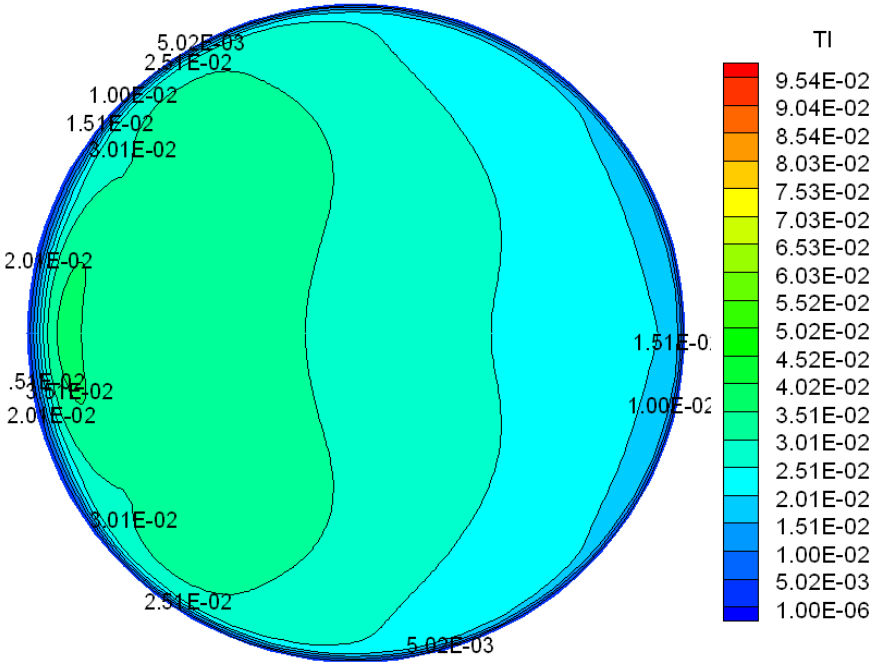

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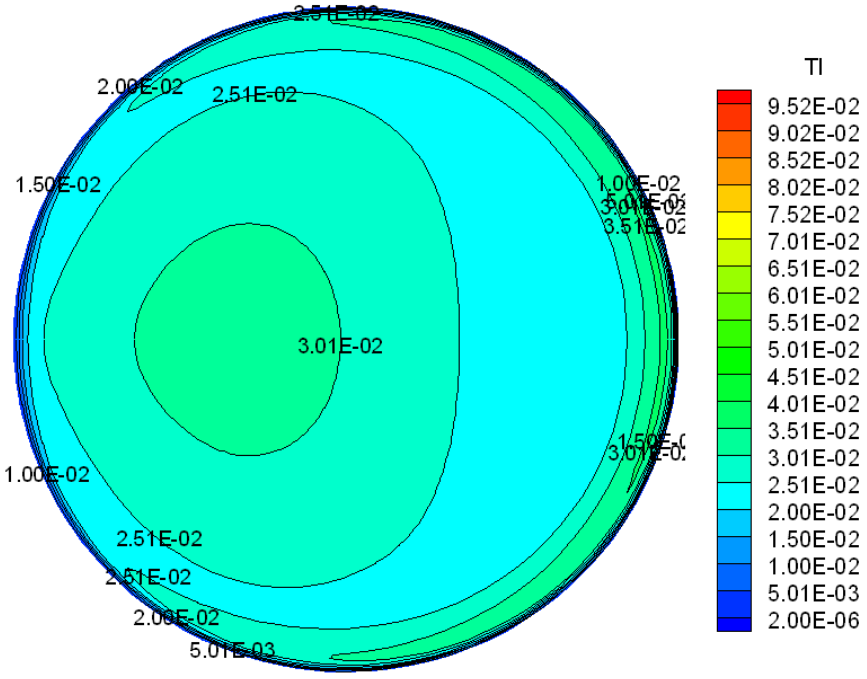
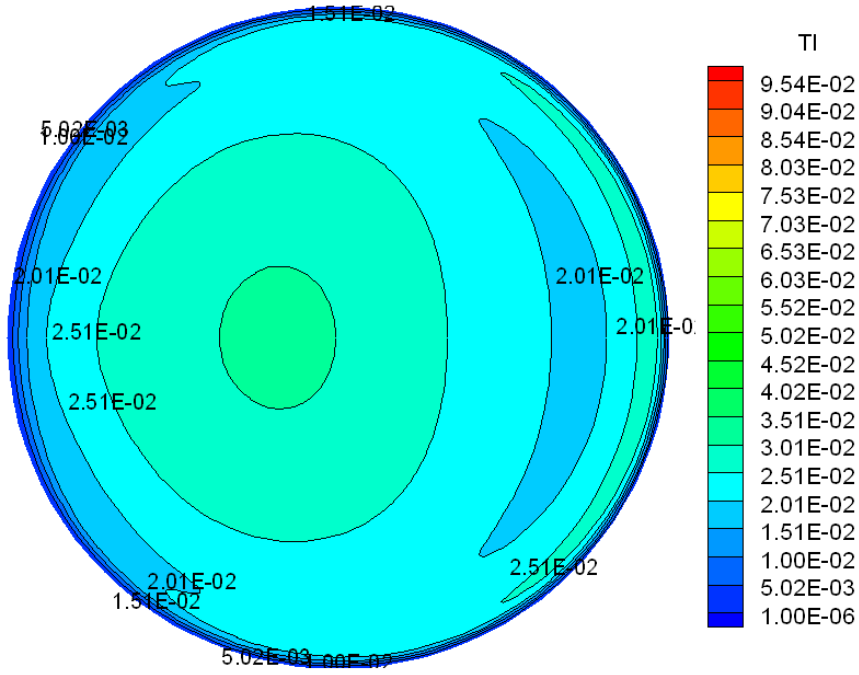


(b-5) s= 3.36 (without a weld - 3.9M)



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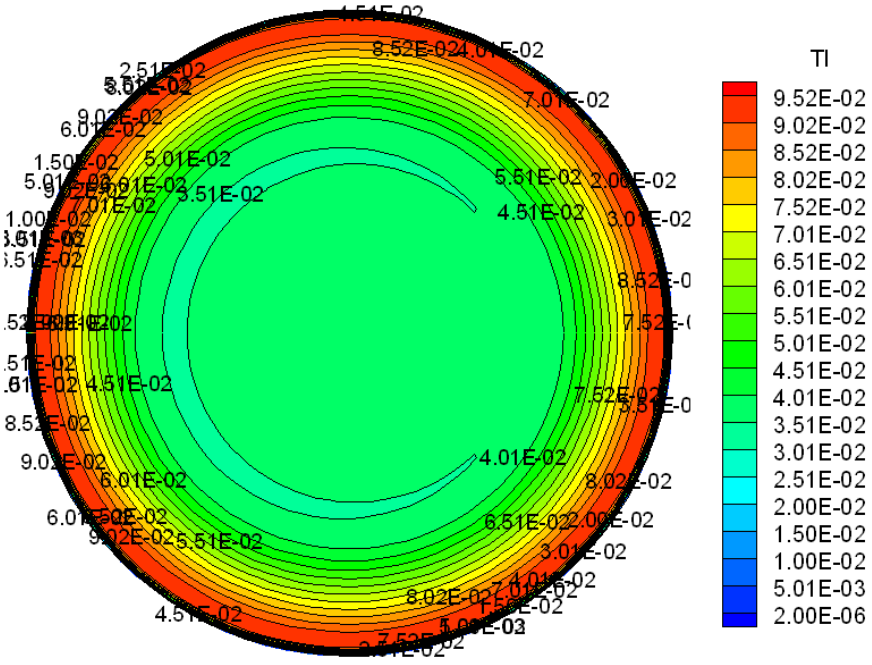

(b-6) s= 8.3375 (without a weld - 3.9M)