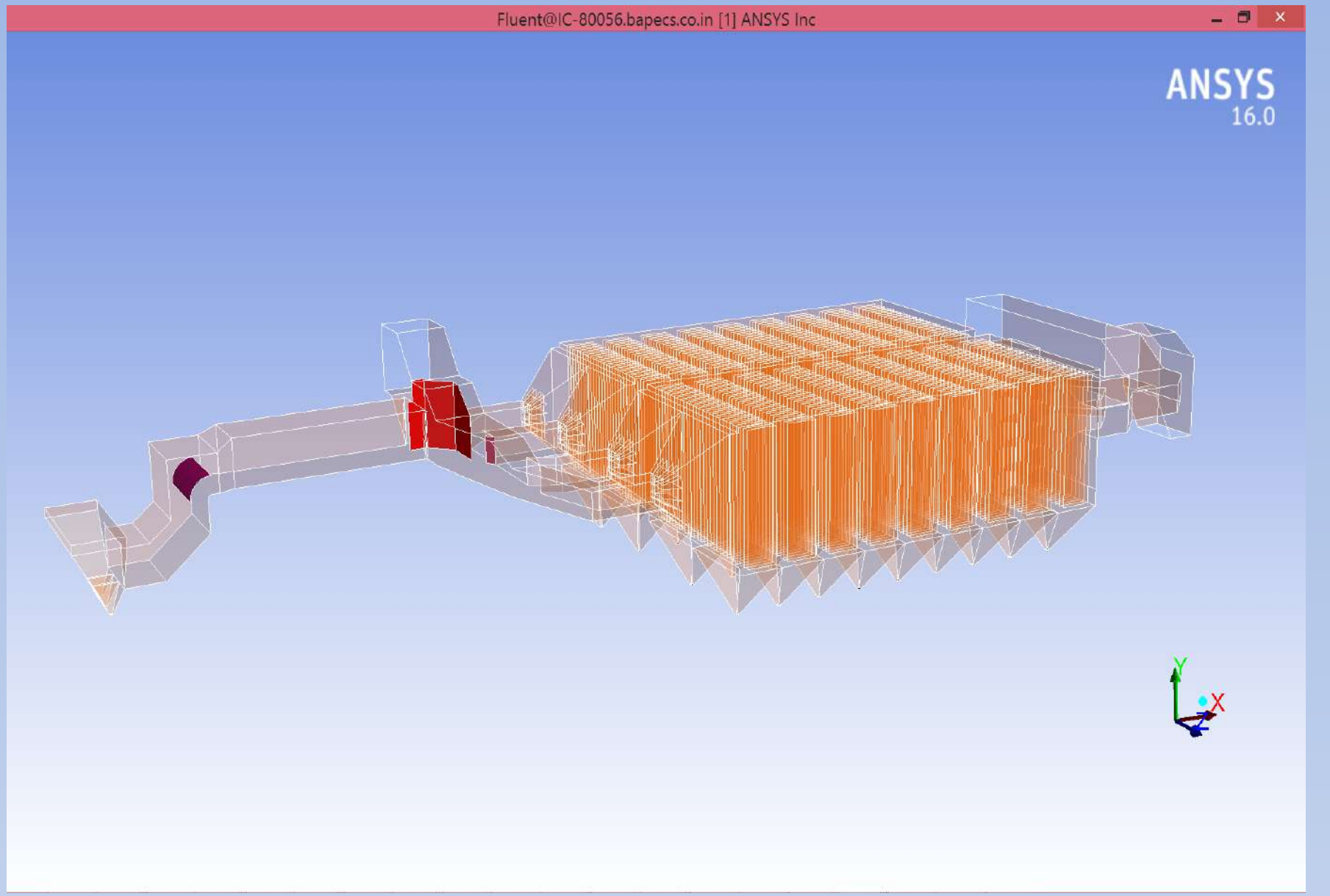
(Two-Phase Flow)

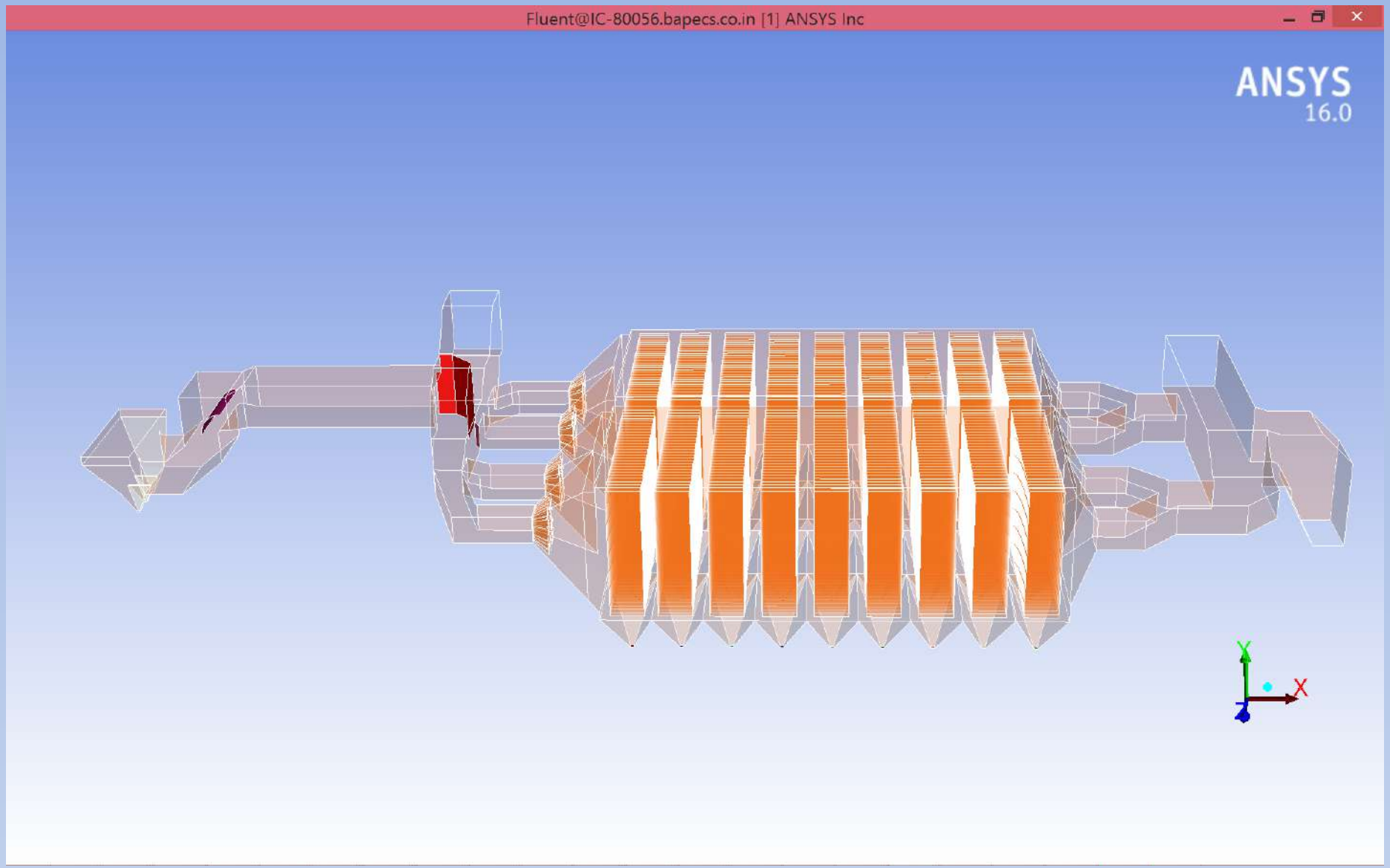
From APH outlet to ID Fan Inle

(800 MW)

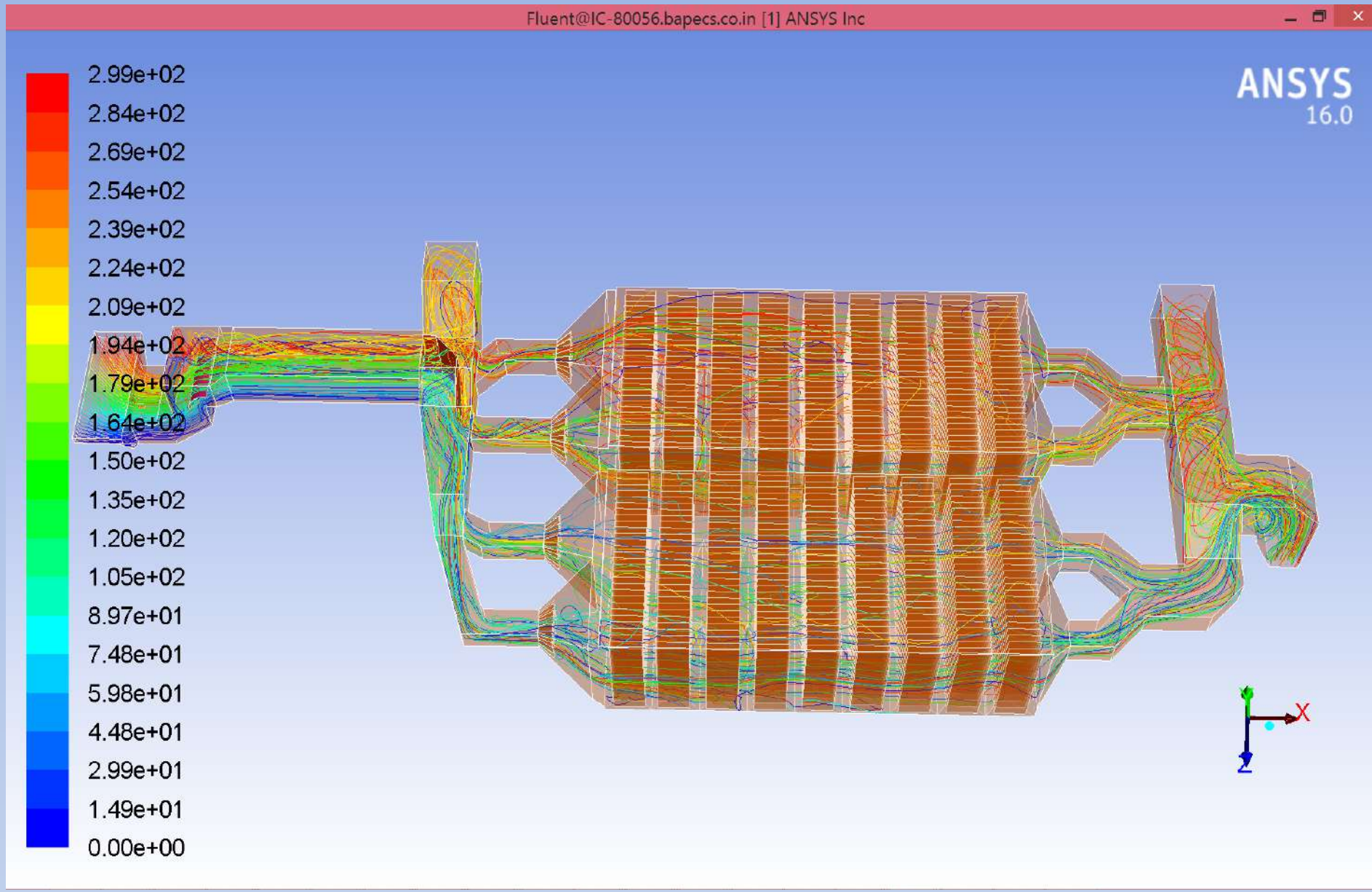
Isometric View



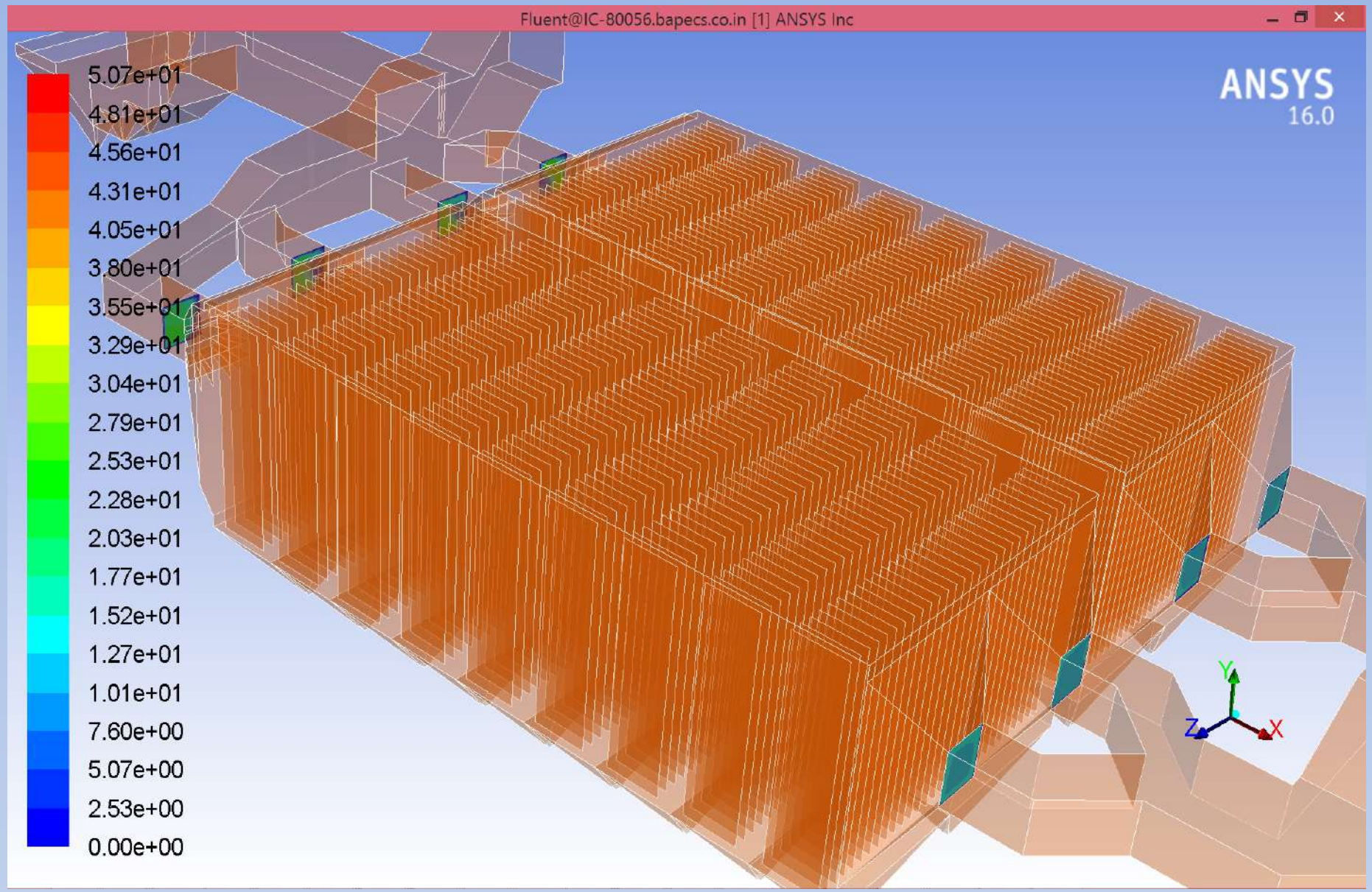
Side View



Path Lines Contours

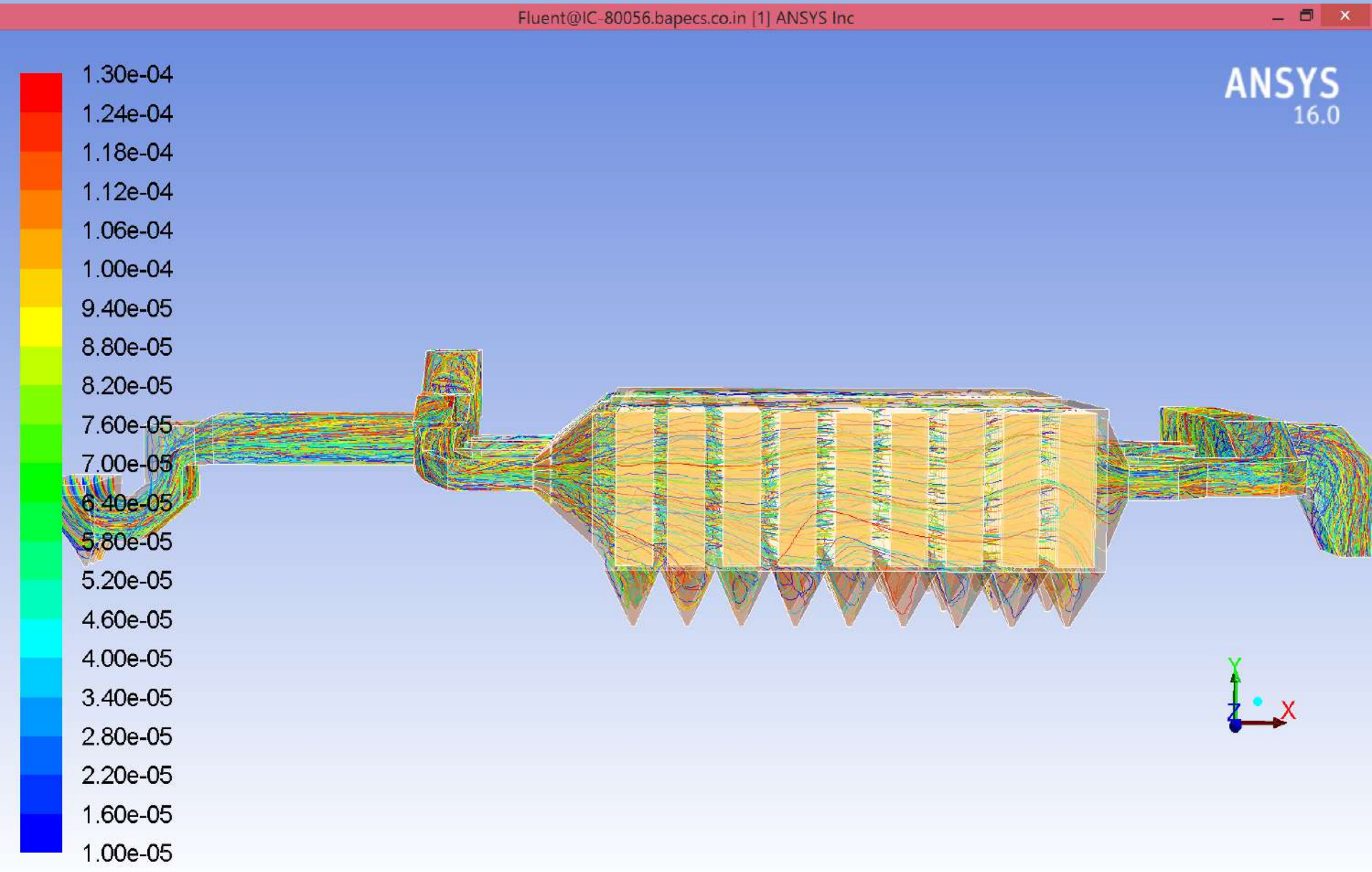


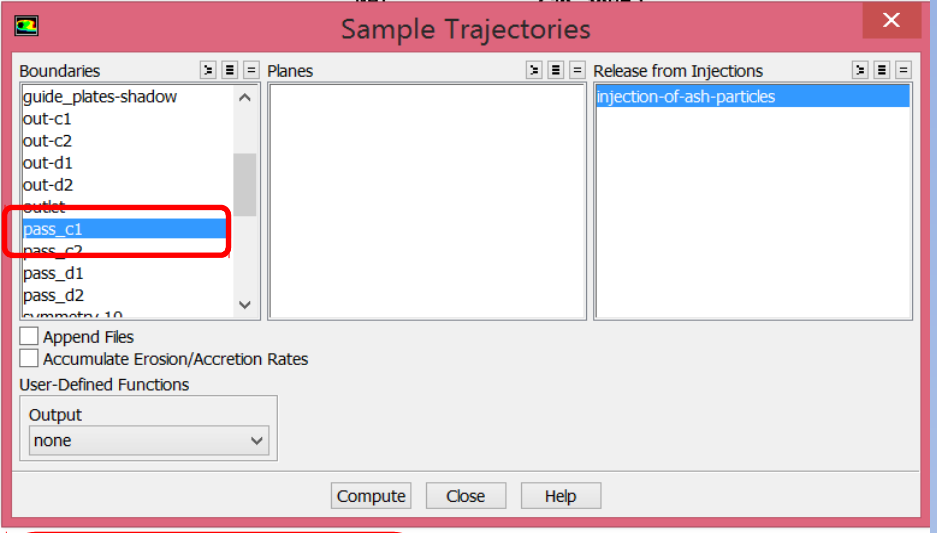
Sample Planes at Inlet and Outlet



ection of Ash Partic

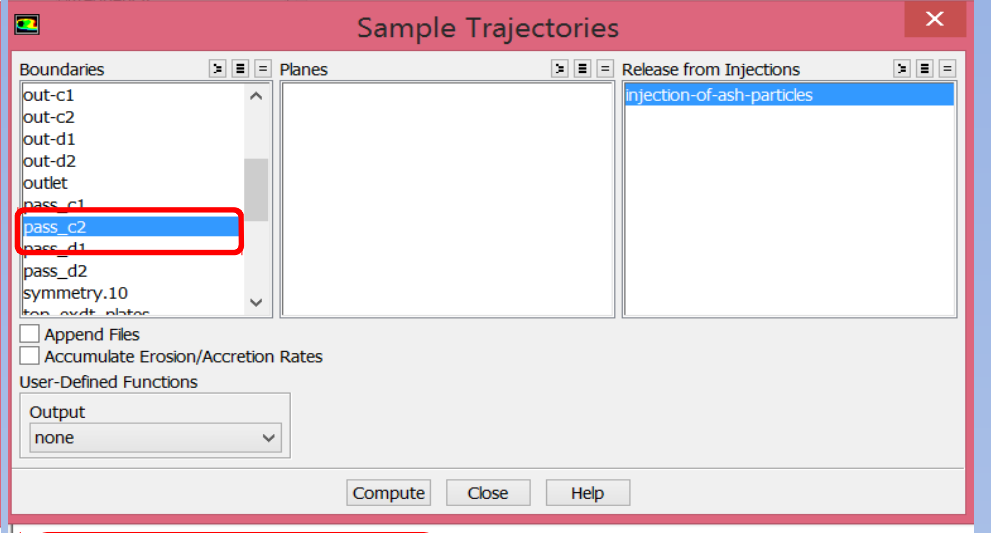
th lines of Injected Particles (Side Vie





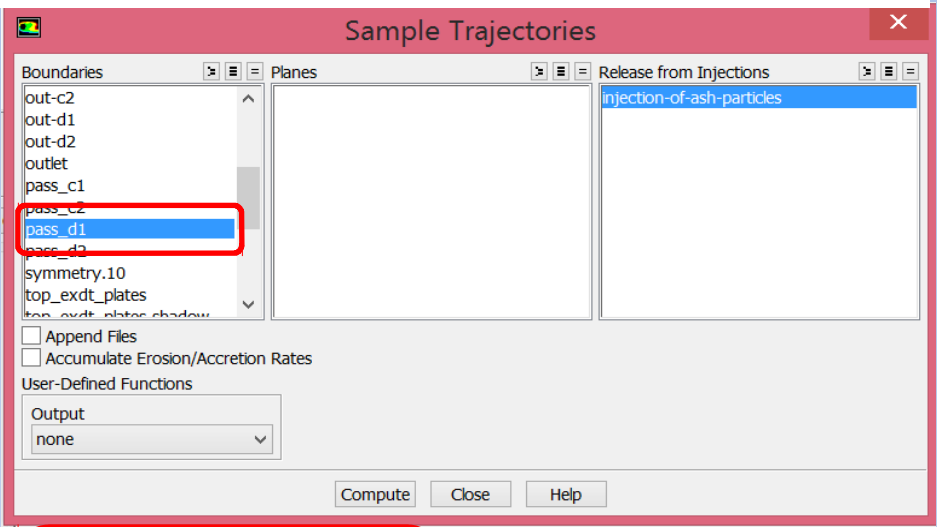

```
for diameter
  total number = 671
  mean = 6.01917e-05
  min  = 1e-06
  max  = 0.00013
  sum  = 0.0403886
  standard deviation = 3.93361e-05
```

Sample Planes C1



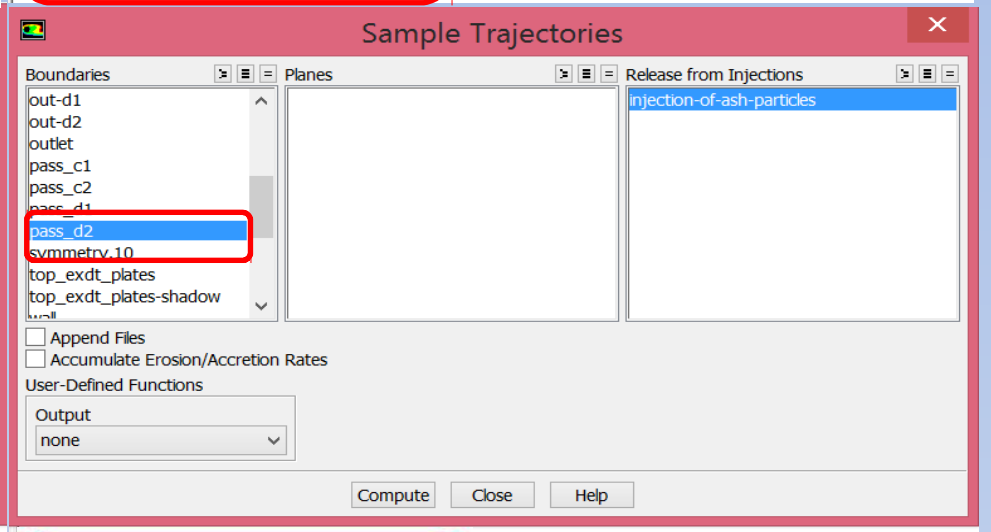

```
for diameter
  total number = 803
  mean = 6.09929e-05
  min  = 1e-06
  max  = 0.00013
  sum  = 0.0489773
  standard deviation = 4.07089e-05
```

Sample Planes C




```
for diameter
  total number = 813
  mean = 6.4698e-05
  min  = 1e-06
  max  = 0.00013
  sum  = 0.0525994
  standard deviation = 4.10819e-05
```

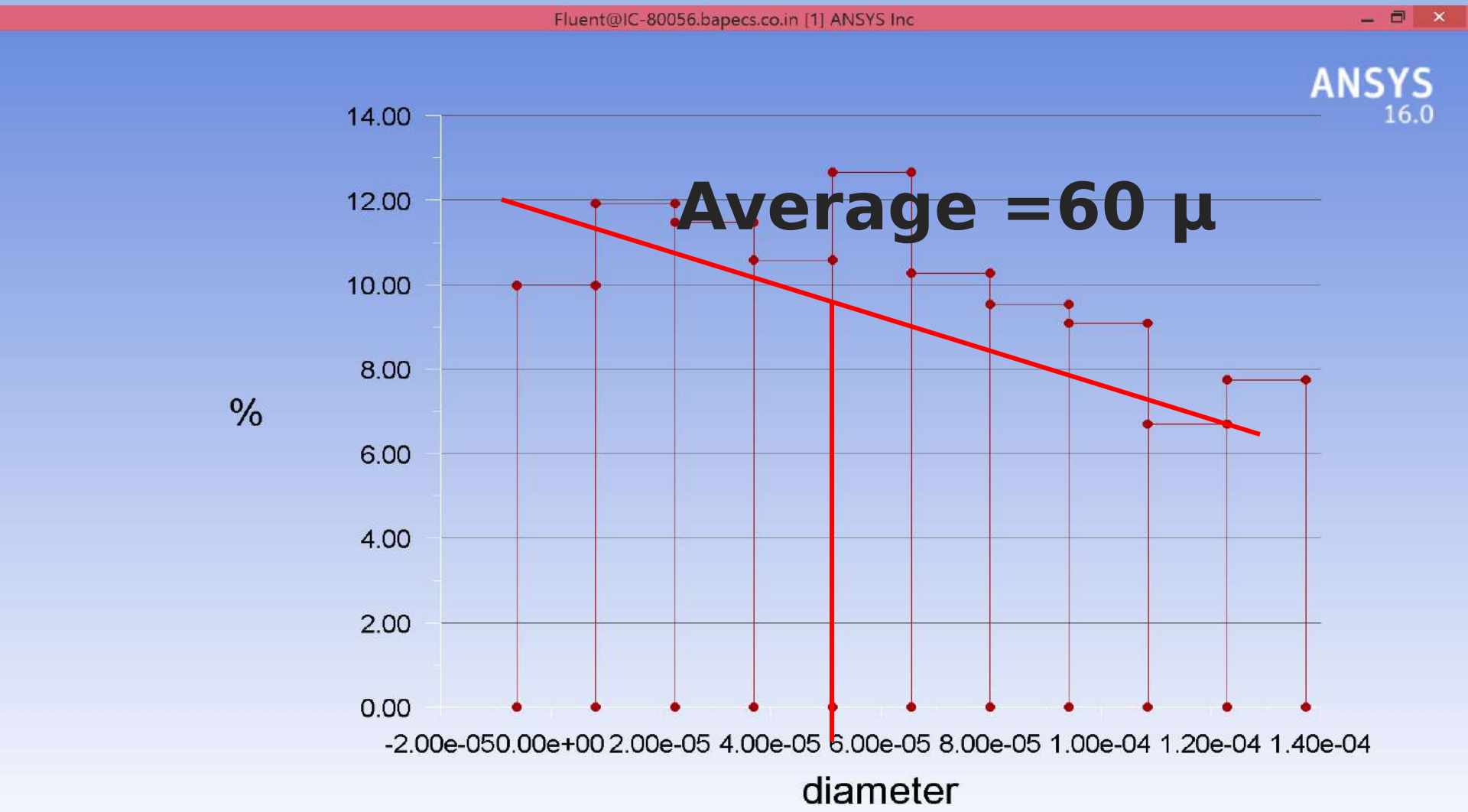
Sample Planes D



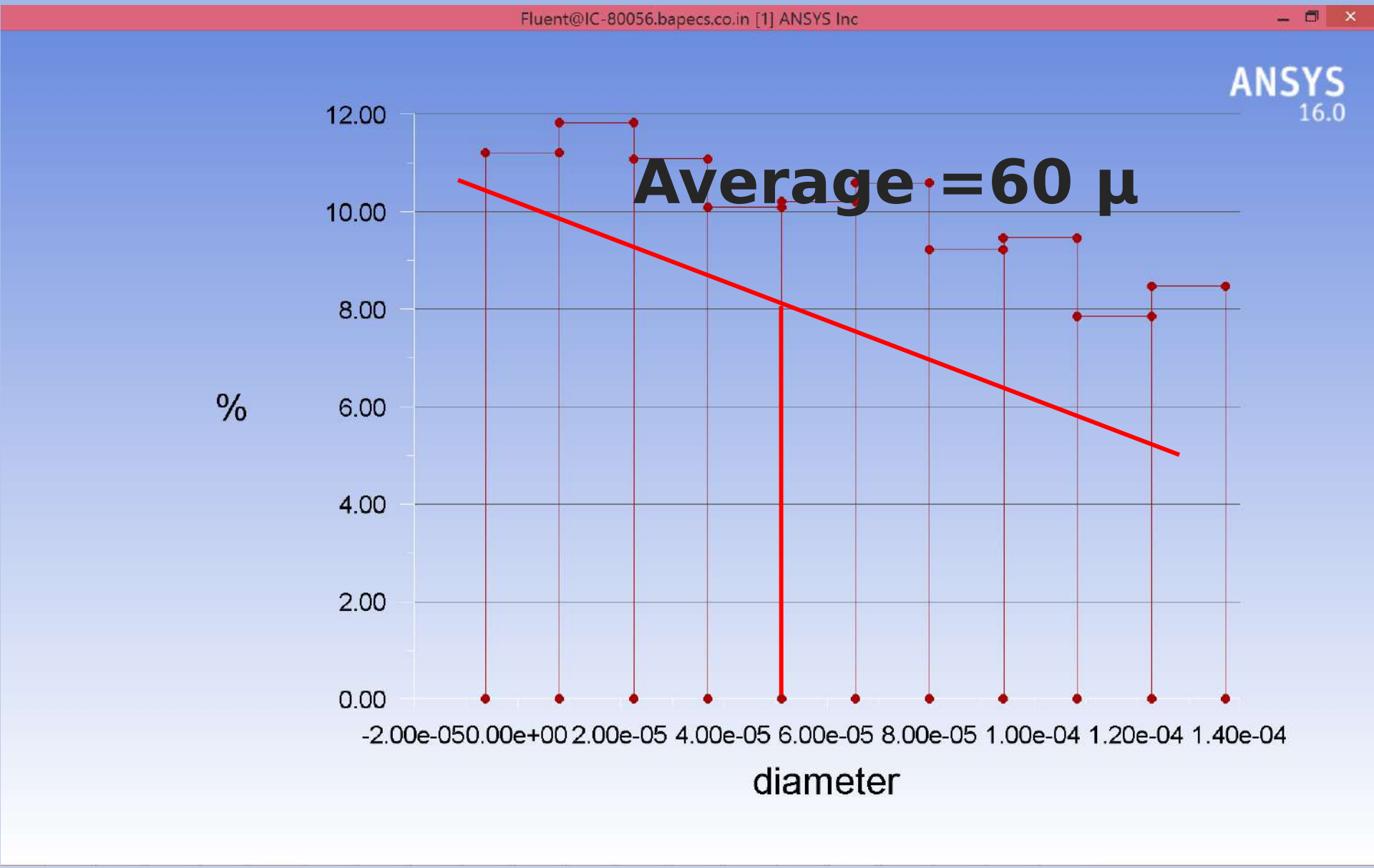

```
for diameter
  total number = 995
  mean = 6.31565e-05
  min  = 1e-06
  max  = 0.00013
  sum  = 0.0727907
  standard deviation = 4.08172e-05
```

mple Planes D

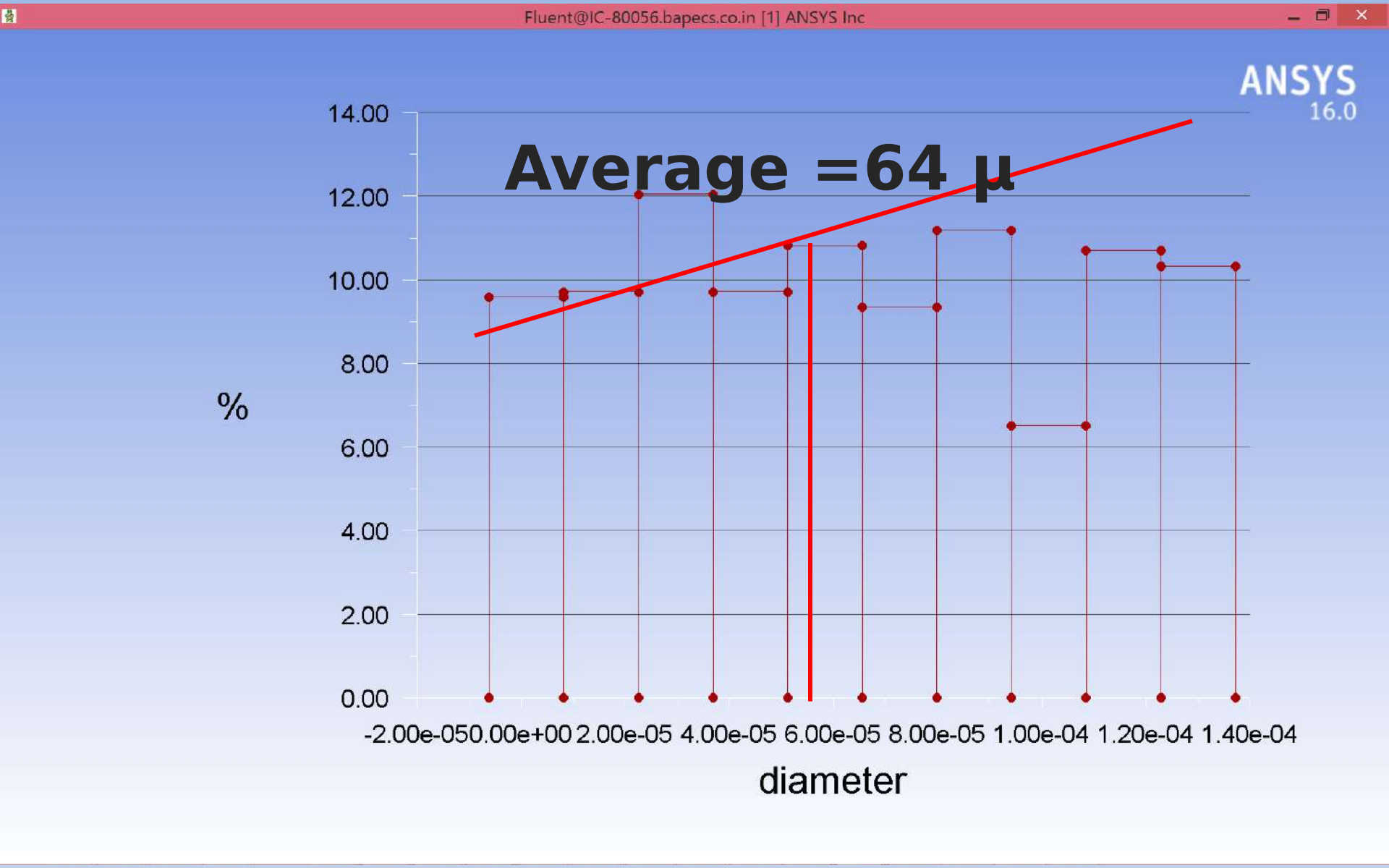
Histogram of Particles Injected At a Sectional plane of C1 pass (Before Inlet)



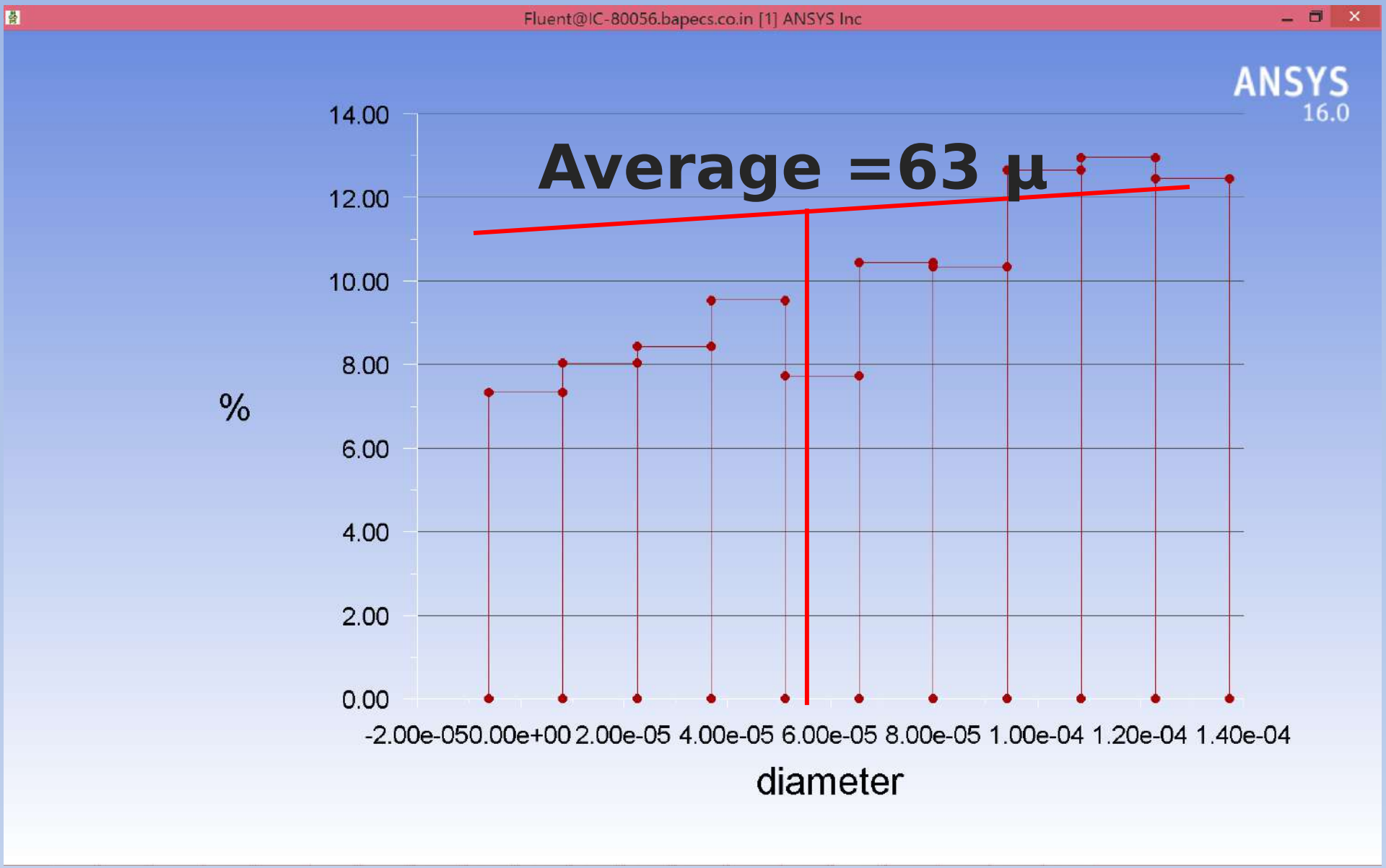
Histogram of Particles Injected At a Sectional plane of C2 pass (Before Inlet)



Histogram of Particles Injected At a Sectional plane of D1 pass (Before Inlet)



Histogram of Particles Injected At a Sectional plane of D2 pass (Before Inlet)



ne Flow Distribution and As

rticles distributions are fou

be within the average valu

of ± 10 %

eek on Particulate collectio
In ESP Hoppers for
C1, Pass C2, Pass D1 & Pas

Modelling Parameters

Geometry:

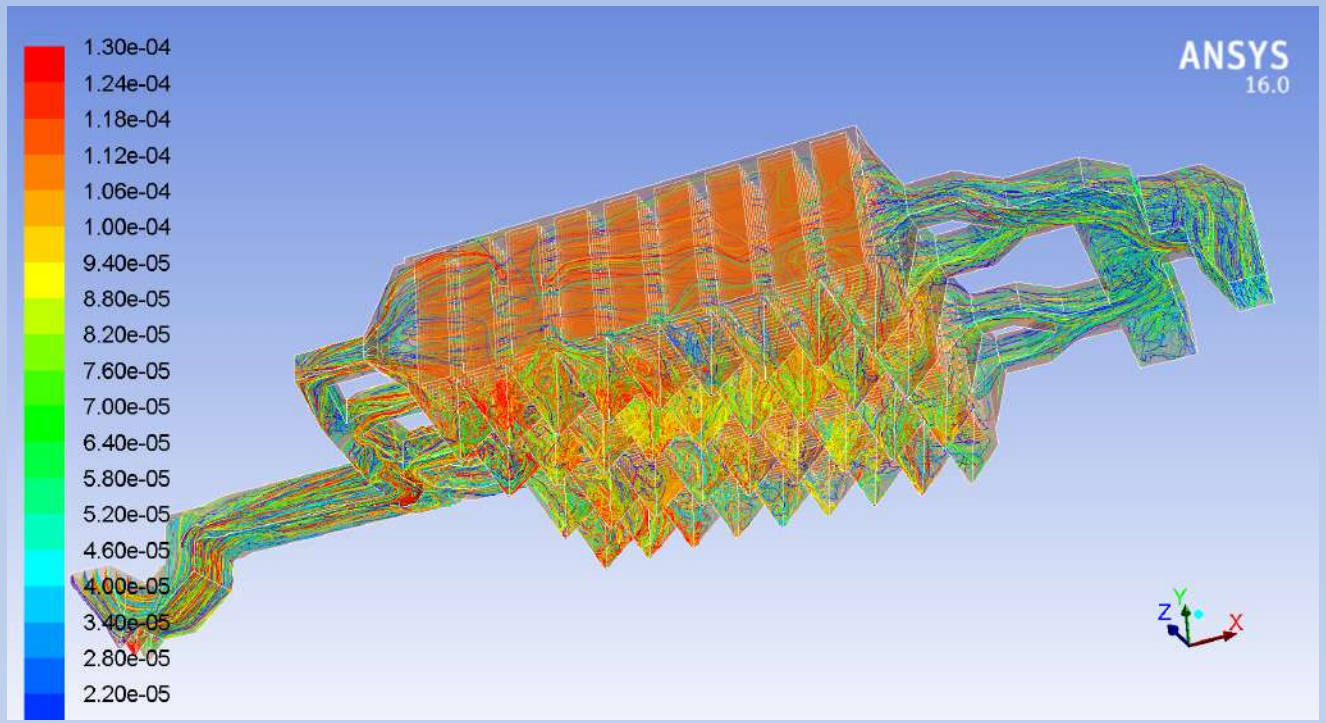
nplete geometry from APH outle
Fan inlet. Splitters, Guide vanes
e Plates are Included. The GD Sc
n deflection plates are not mode

Analysis:

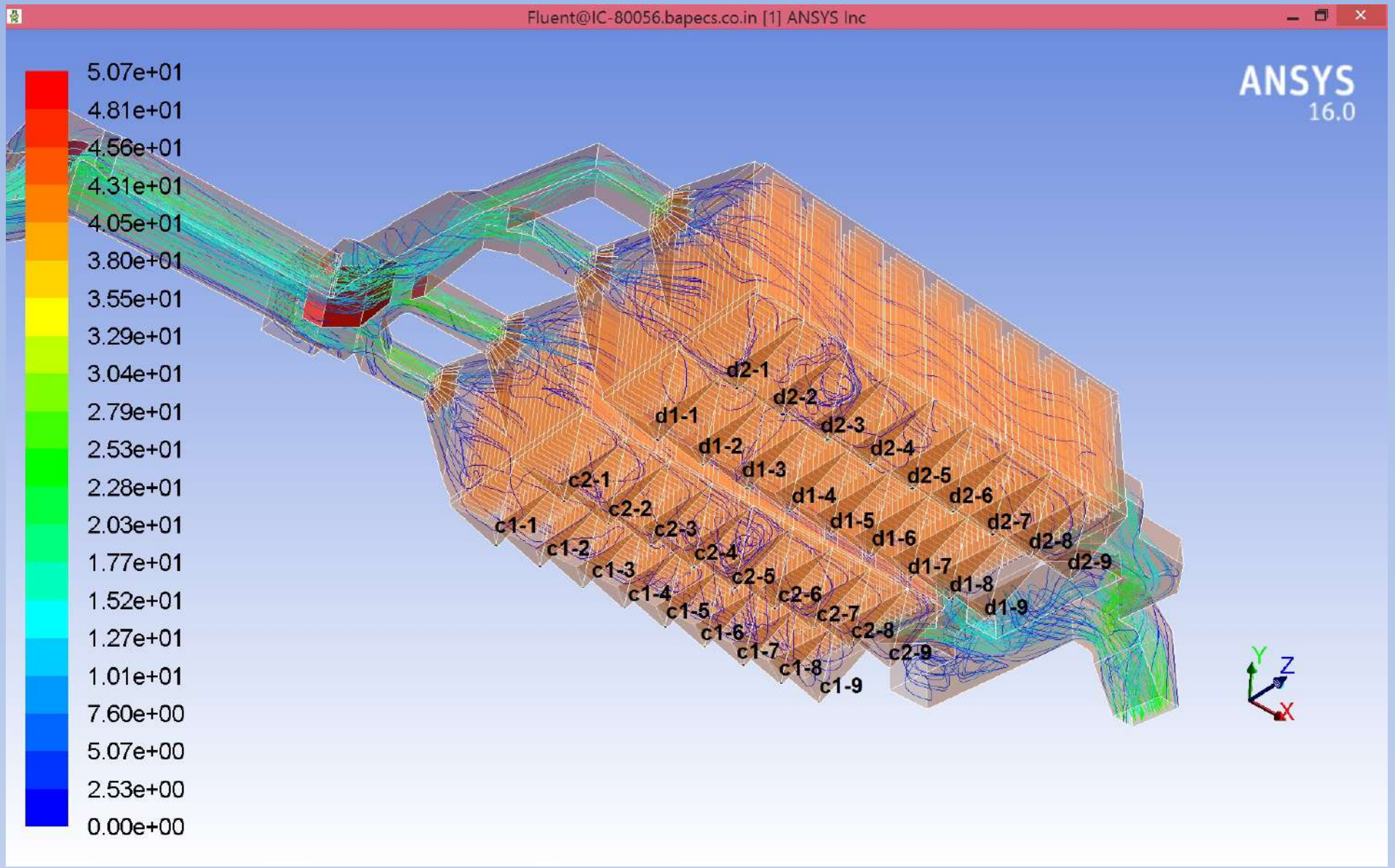
n Lammler model is considered fo
tion of Ash particles for the assu
Sample size. Gravity Enabled and
No Electrostatic force

ected Ash particles Sample s

Particle size	Distribution	Mass fraction in Range
(micron)	%	
<10	5.7	0.057
10-30	13.6	0.136
30-50	13	0.13
50-70	11.4	0.114
70-90	9.8	0.098
90-110	7.8	0.078
>110	38.7	0.387



Location of ESP Hoppers



luent – Particle Track

Consolidated data

1	Trapped - Zone 79	29		C1-9
2	Trapped - Zone 80	43		C1-8
3	Trapped - Zone 81	333		C1-7
4	Trapped - Zone 82	93		C1-6
5	Trapped - Zone 83	5		C1-5
6	Trapped - Zone 84	55		C1-4
7	Trapped - Zone 85	146		C1-3
8	Trapped - Zone 86	448		C1-2
9	Trapped - Zone 87	269		C1-1
10	Trapped - Zone 90	360		C2-7
11	Trapped - Zone 91	113		C2-6
12	Trapped - Zone 92	16		C2-5
13	Trapped - Zone 93	16		C2-4
14	Trapped - Zone 94	35		C2-3
15	Trapped - Zone 95	476		C2-2
16	Trapped - Zone 96	135		C2-1
17	Trapped - Zone 97	3		D1-9
18	Trapped - Zone 99	22		D1-7
19	Trapped - Zone 100	97		D1-6
20	Trapped - Zone 101	9		D1-5
21	Trapped - Zone 102	318		D1-4
22	Trapped - Zone 103	17		D1-3
23	Trapped - Zone 104	181		D1-2
24	Trapped - Zone 105	397		D1-1
25	Trapped - Zone 106	153		D2-9
26	Trapped - Zone 107	258		D2-8
27	Trapped - Zone 108	72		D2-7
28	Trapped - Zone 109	8		D2-6
29	Trapped - Zone 110	192		D2-5
30	Trapped - Zone 111	41		D2-4
31	Trapped - Zone 112	47		D2-3
32	Trapped - Zone 113	54		D2-2
33	Trapped - Zone 114	23		D2-1
34	Escaped - Zone 53	9466		

	Pass C1	Pass C2	Pass D1	Pass D2	
Hopper					Total
1	269	135	397	23	824
2	448	476	181	54	1159
3	146	35	17	47	245
4	55	16	318	41	430
5	5	16	9	192	222
6	93	113	97	8	311
7	333	360	22	72	787
8	43	0	0	258	301
9	29	0	3	153	185
Total	1421	1151	1044	848	4464

Total Particles Injected =	15000
Total Particles Escaped =	9466
Total Particles Trapped =	4464
Total Particles Incomplete =	1070

With Gravity Enabled Modeling

Percent of Particles Collected = 29.76 %