Edge Coupler

Moisés de Araújo Oliveira

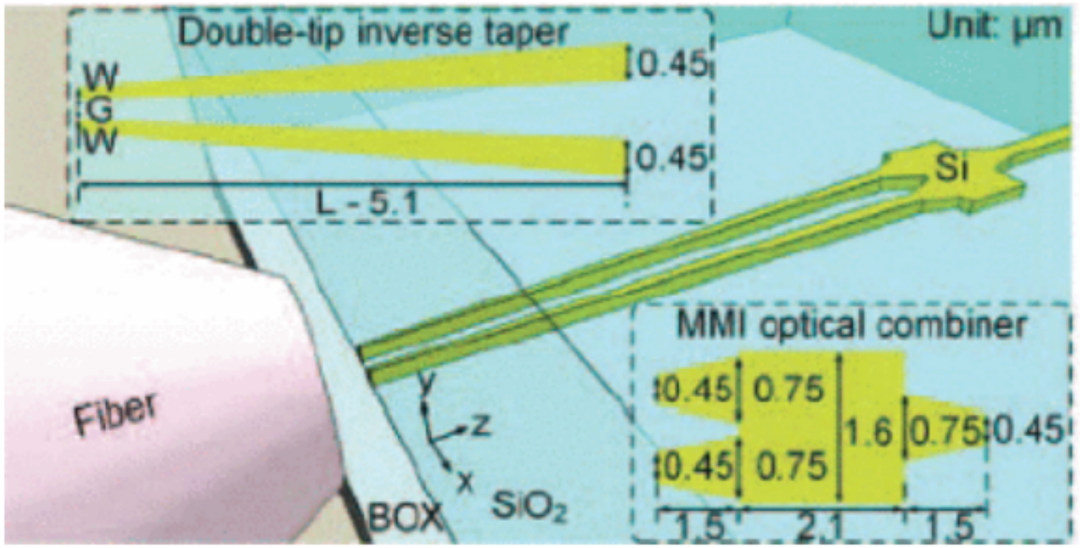
Referência

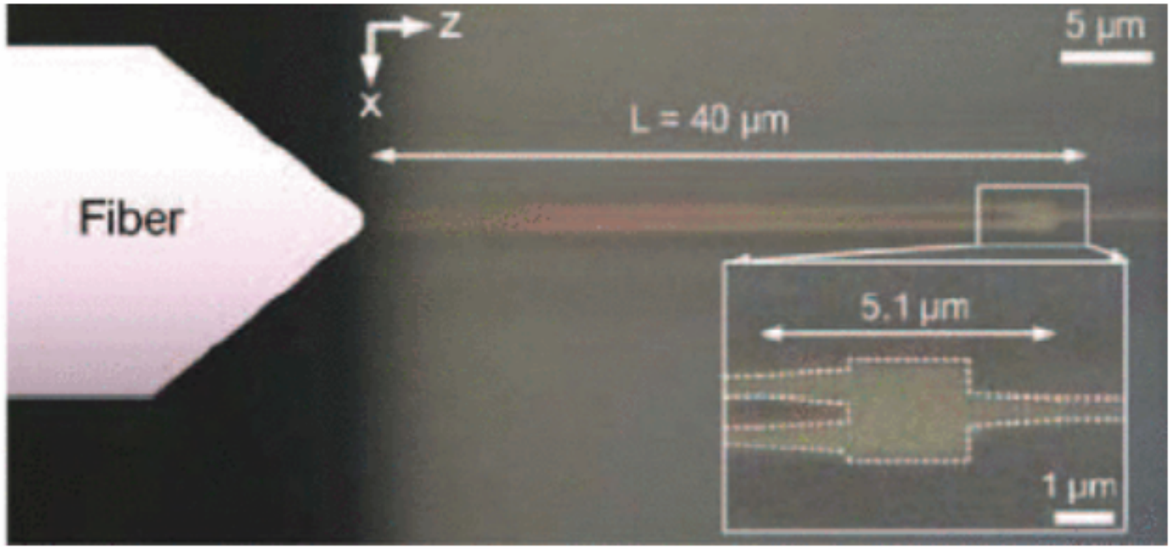
J. Wang et al., "Low–loss and misalignment–tolerant fiber–to–chip edge coupler based on double–tip inverse tapers," 2016 Optical Fiber Communications Conference and Exhibition (OFC), Anaheim, CA, USA, 2016, pp. 1–3.

Double-tip Inverse Taper

- maior grau de liberdade para design
- maior coeficiente de acoplamento
- tolerância ao desalinhamento
-

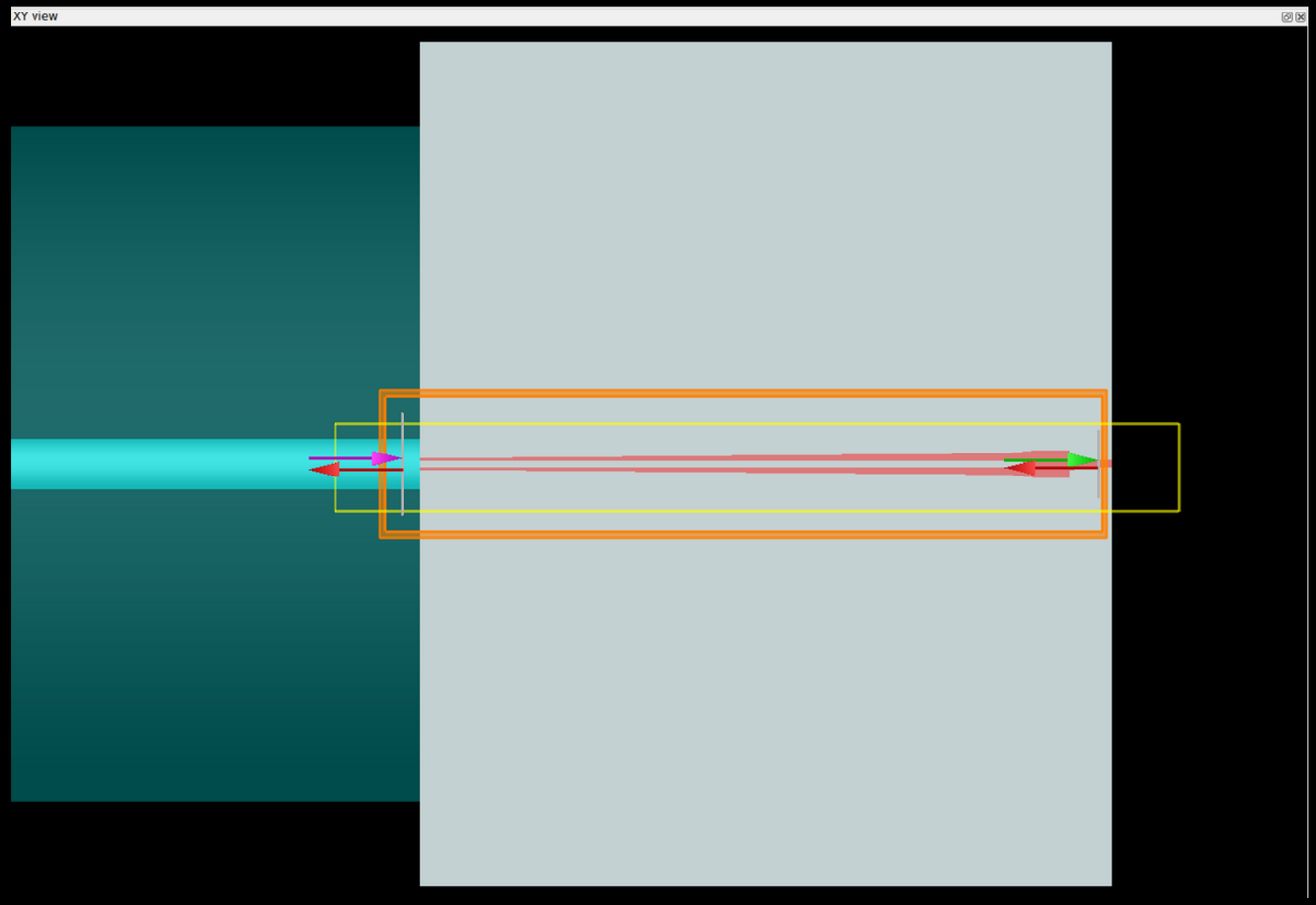
Design


Double-tip inverse taper
Unit: μm
W
G
W
0.45
0.45
L - 5.1
Si
MMI optical combiner
0.45
0.75
0.45
0.75
1.6
0.75
0.45
1.5
2.1
1.5
Fiber
y
z
x
BOX
SiO_2

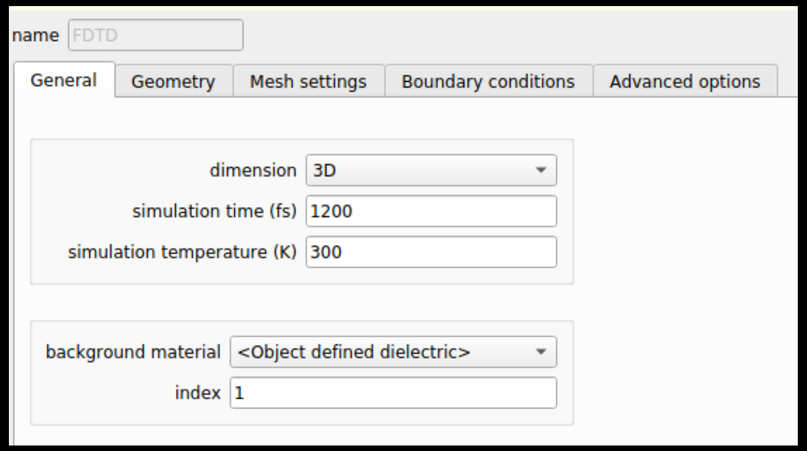

z
x
5 μm
L = 40 μm
Fiber
5.1 μm
1 μm

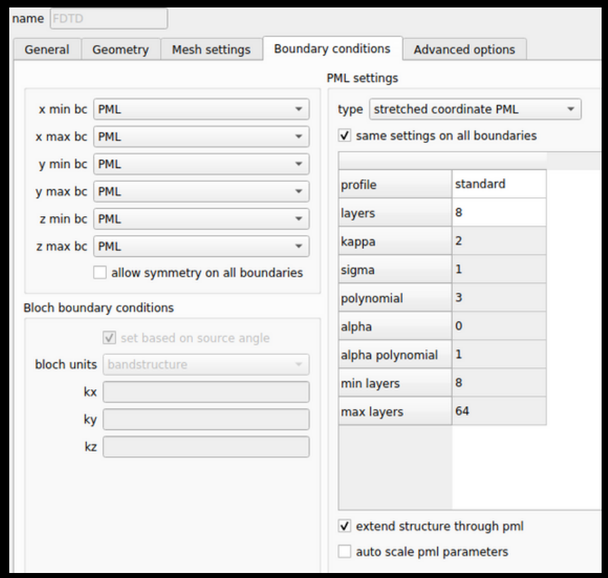
semana 1

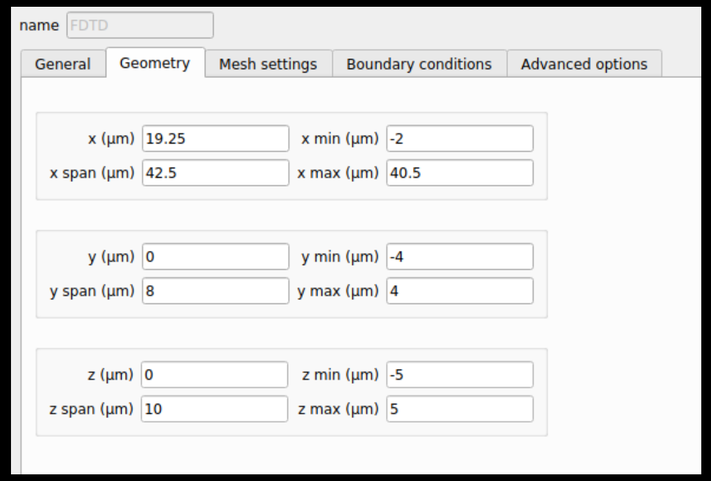
Design – FDTD

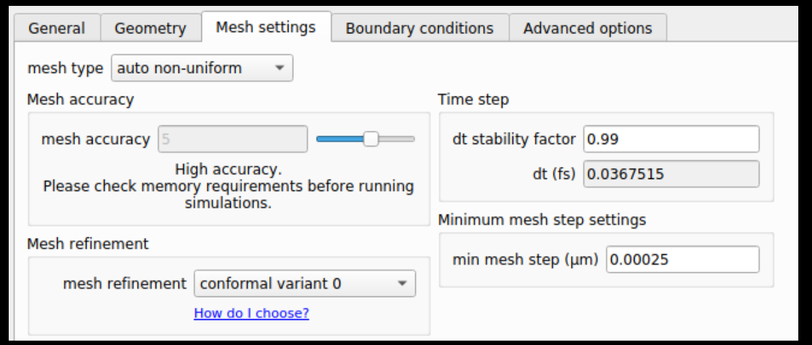


FDTD SETTINGS

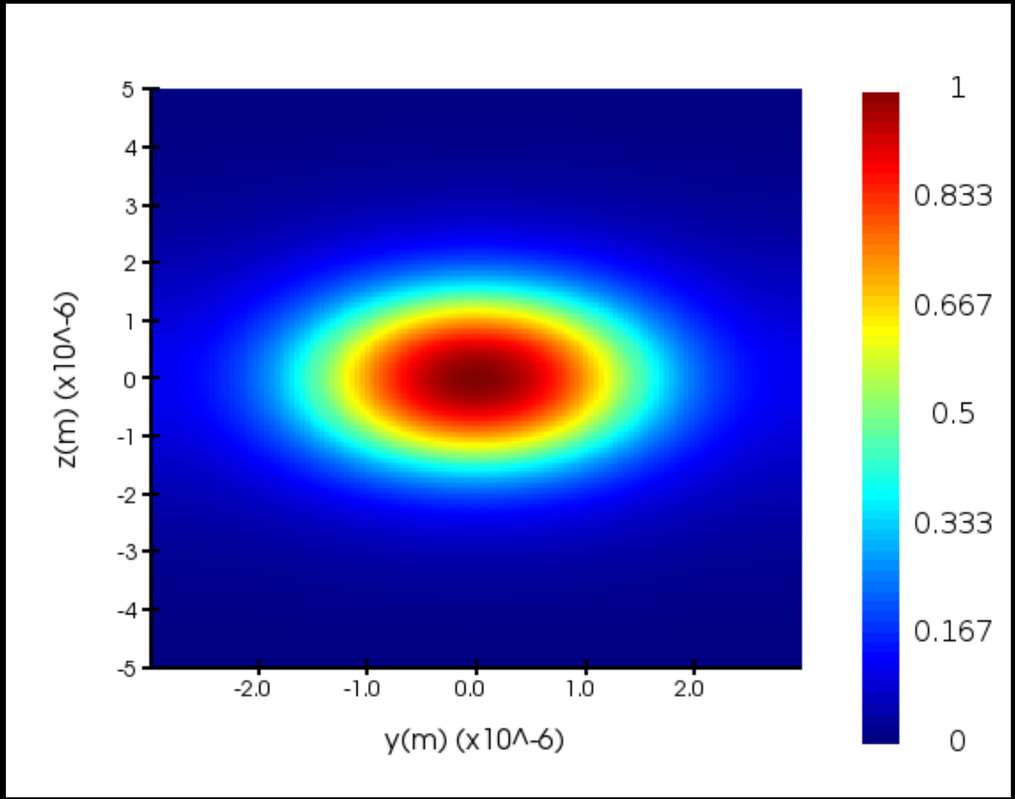


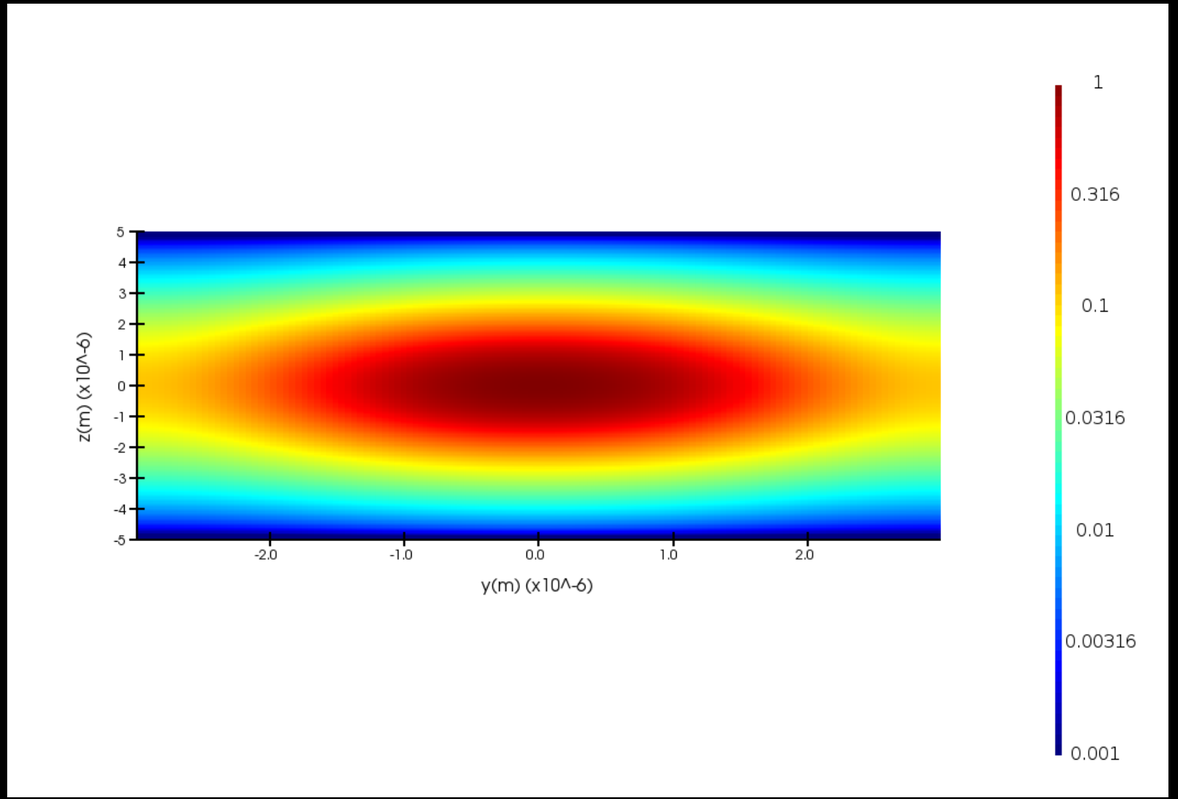






TE MODE INPUT FIELD IN THE FIBER

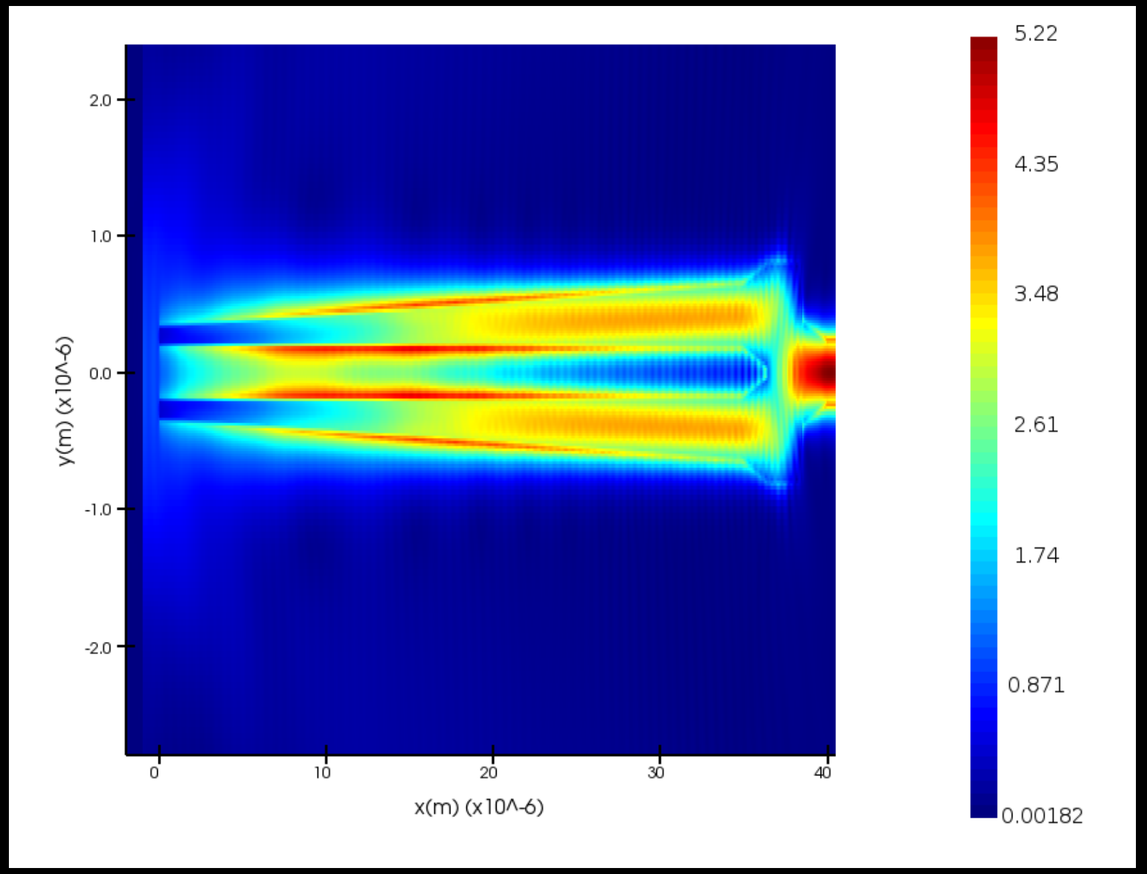


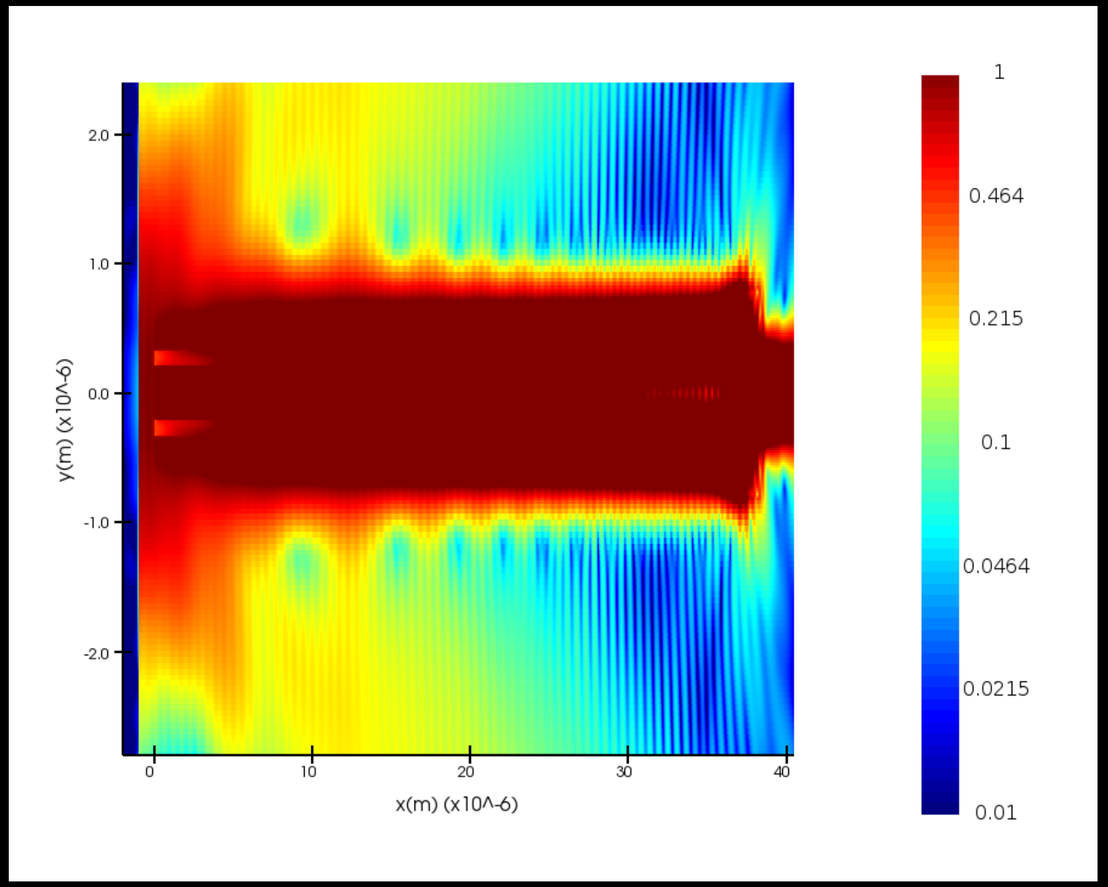


y span = 6 um

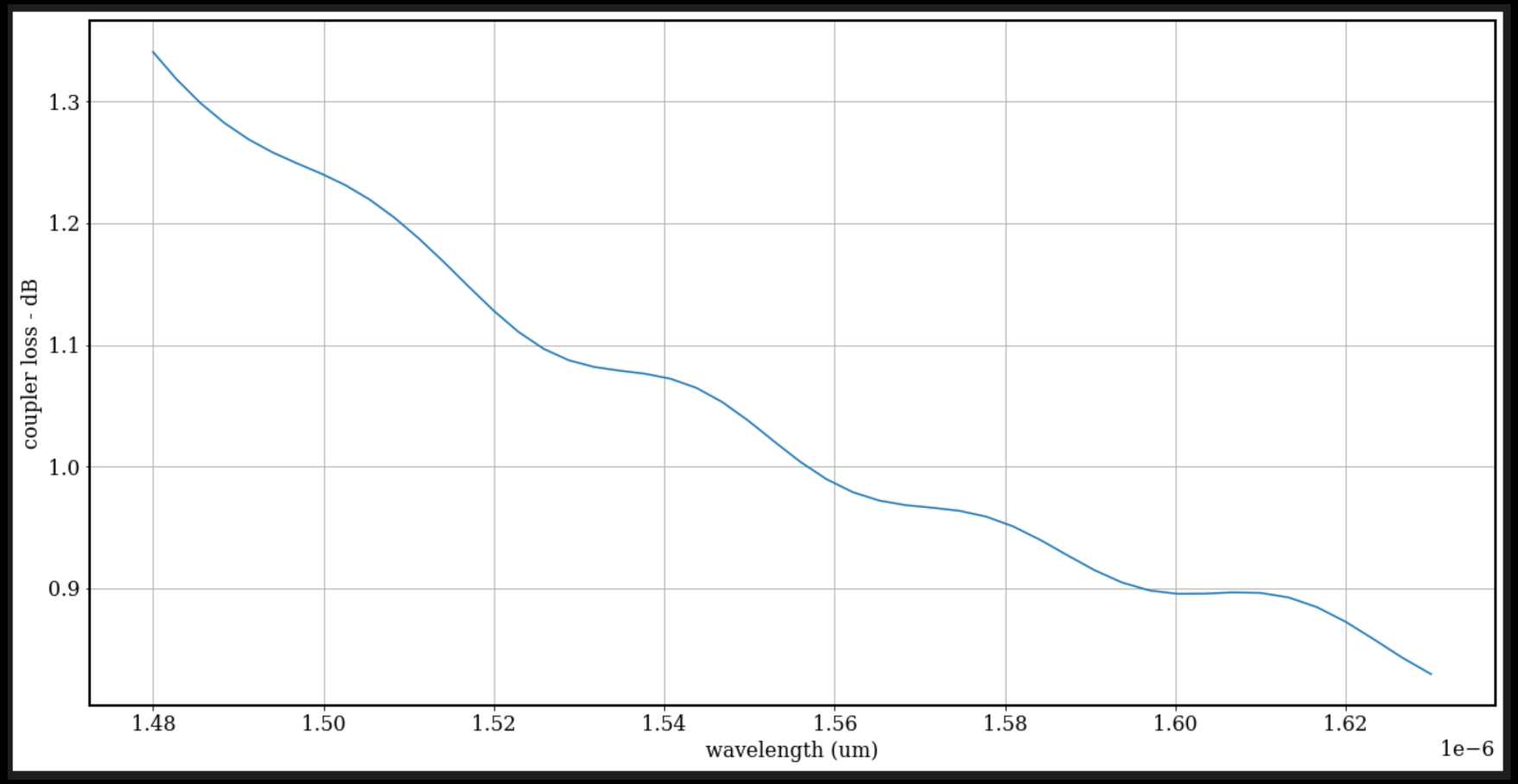
z span = 10 um

DISTRIBUIÇÃO DE CAMPO

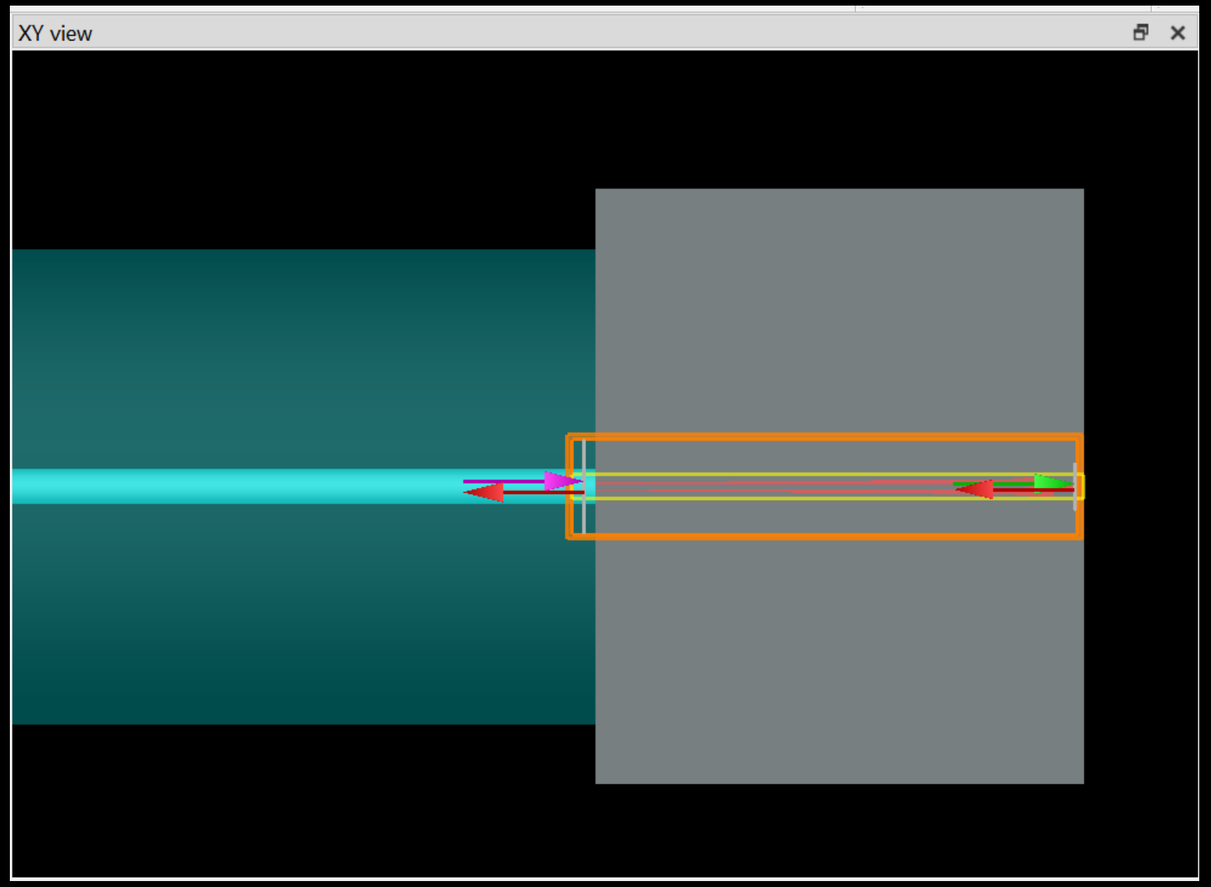




COUPLING LOSS

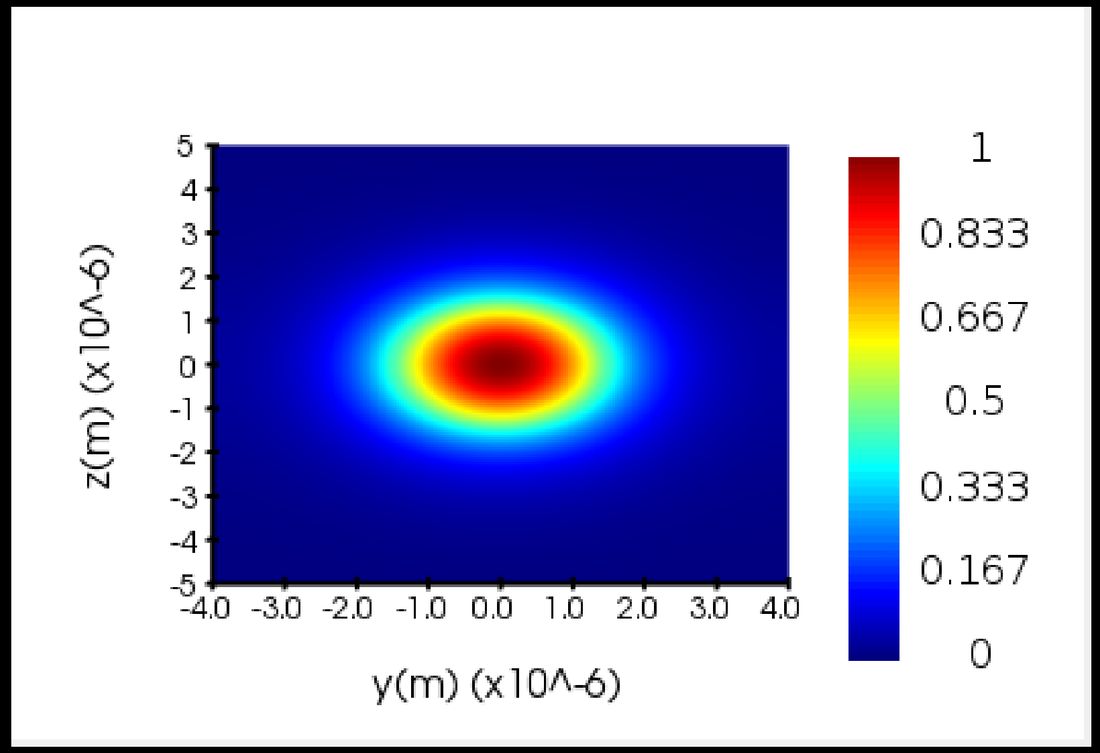


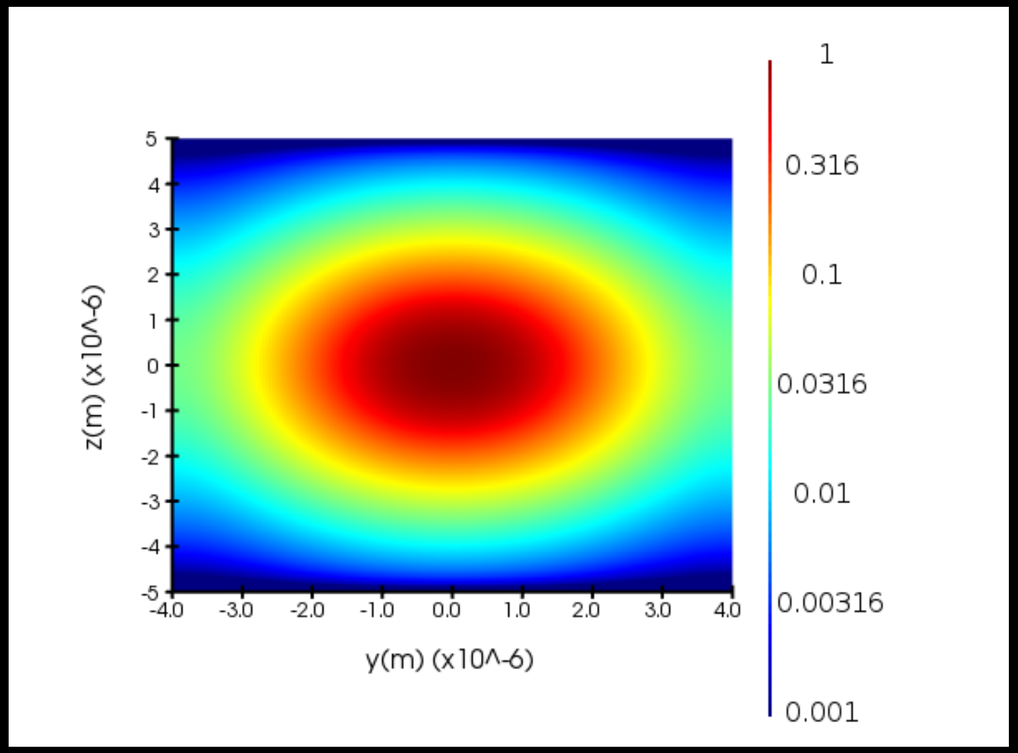
semana 2
06/03 - 17/03



- o yspan da porta de entrada foi aumentada para 8um
- a condição de fronteira para z min foi mudada para summetric
- o mesh utilizado foi de 5

TE MODE INPUT FIELD IN THE FIBER





y span = 8 um

z span = 10 um

COUPLING LOSS