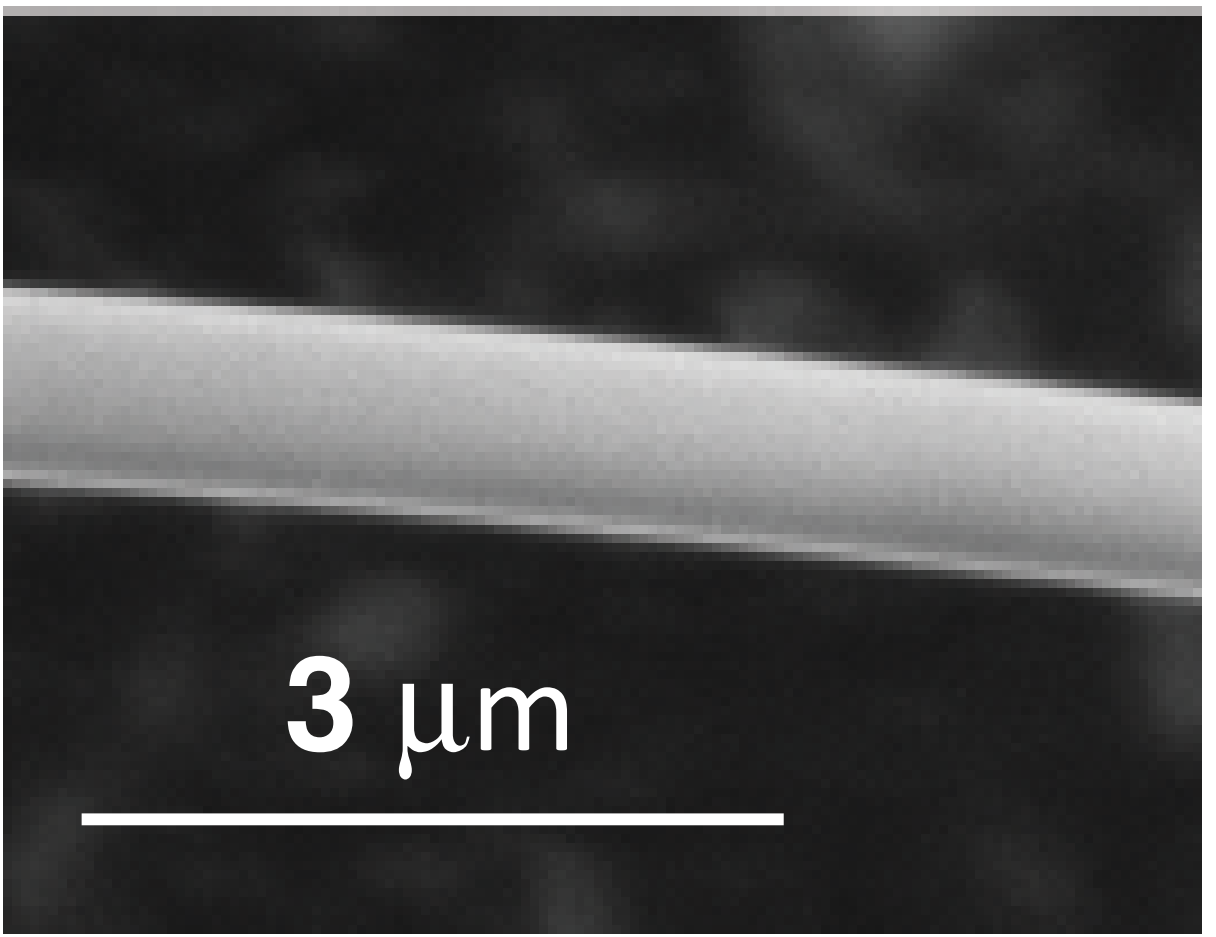
3 μm

Example: Brillouin Self-cancellation

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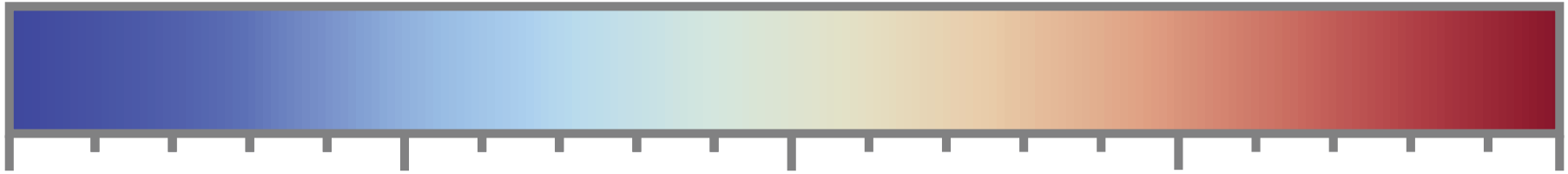
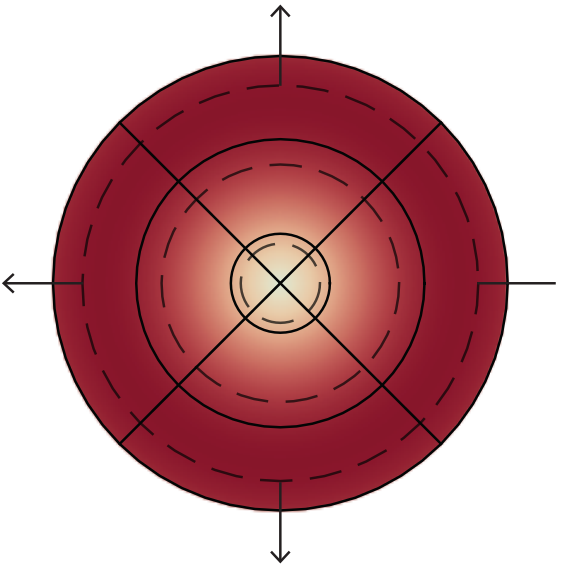
Wombat 2022, Erlangen, June 14th 2022. Gustavo Wiederhecker.

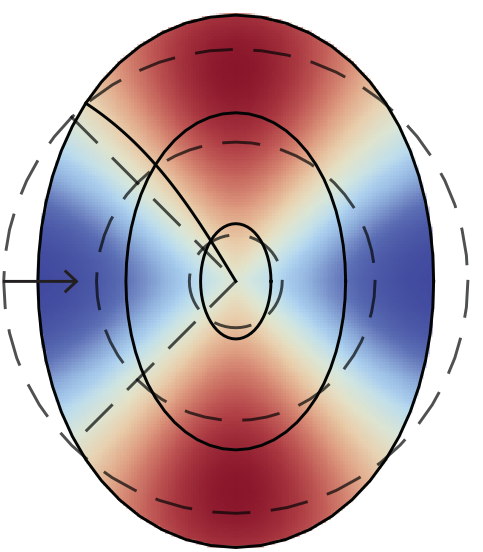

-1.0
-0.5
0
0.5
1.0

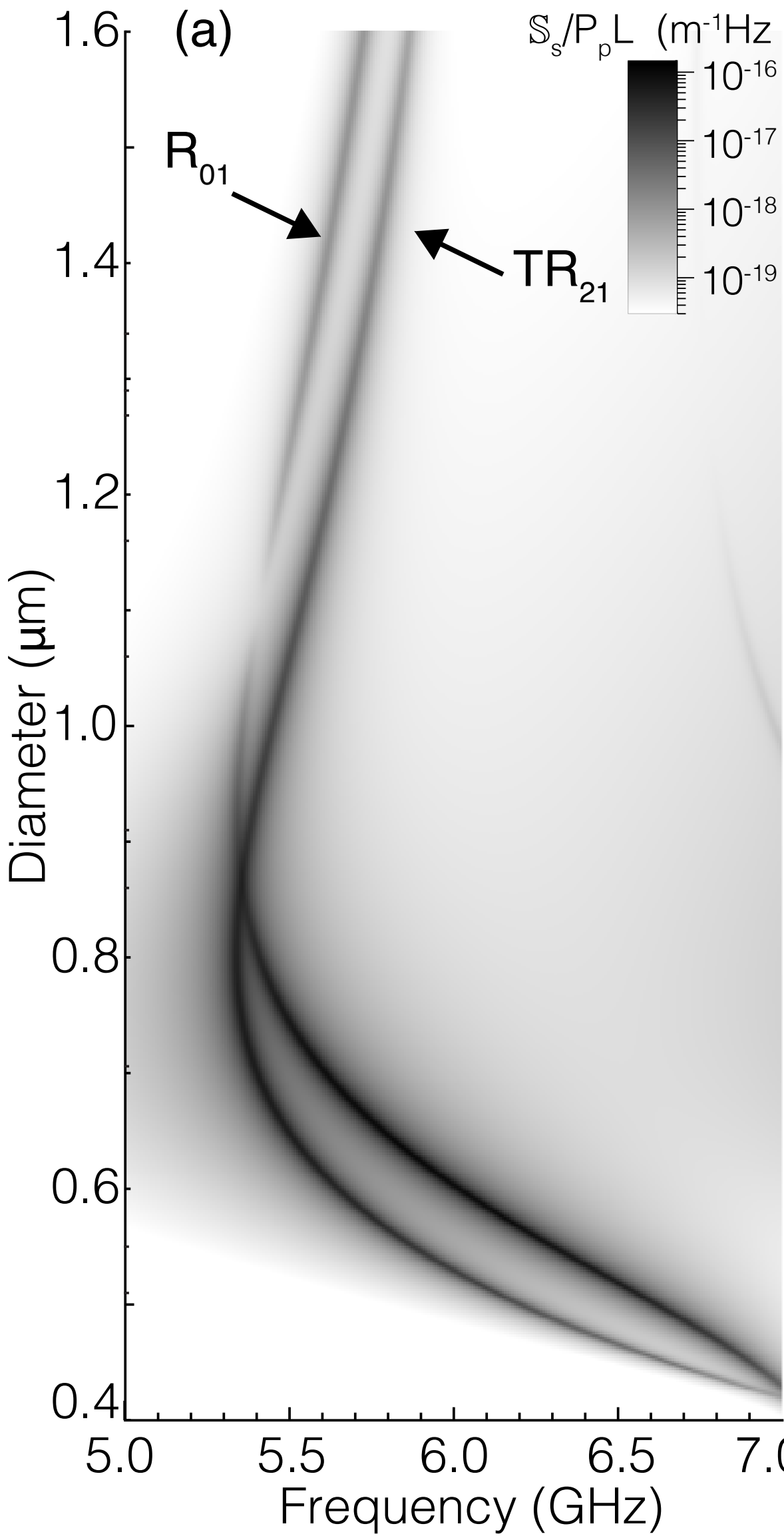
Displacement

Radial (R_{01})



Torsional-Radial (TR_{21})




(a)
$\mathbb{S}_s/P_pL$ (m^{-1}Hz
10^{-16}
10^{-17}
10^{-18}
10^{-19}
R_{01}
TR_{21}
1.6
1.4
1.2
1.0
0.8
0.6
0.4
Diameter (μm)
5.0
5.5
6.0
6.5
7.0
Frequency (GHz)

(b)

1.34 μm

1.29 μm

1.27 μm

×15

1.16 μm

×10

1.06 μm

0.91 μm

0.86 μm

0.71 μm

0.55 μm

0.51 μm

0.5 dB

0.5 dB

0.5 dB

1 dB

2 dB

3 dB

5 dB

5 dB

1 dB

1 dB

5.0

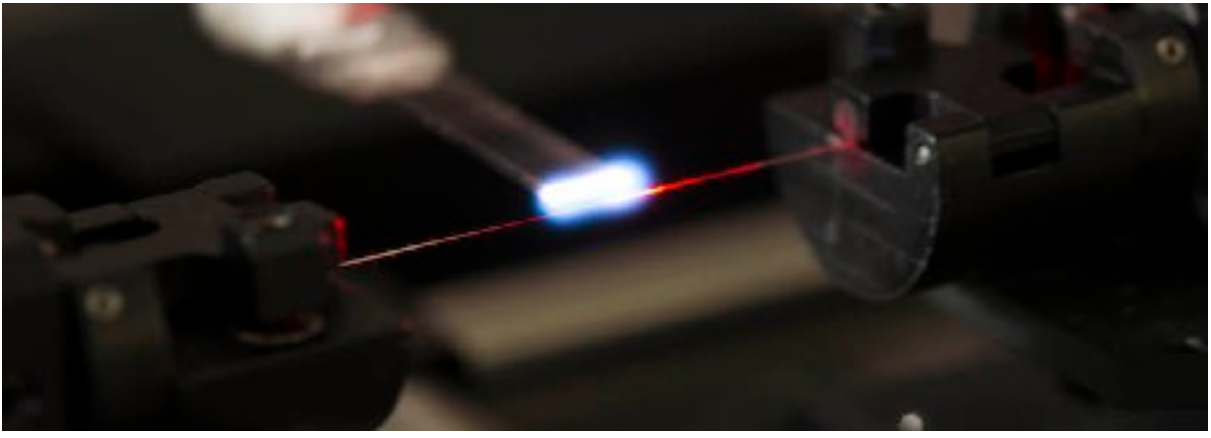
5.5

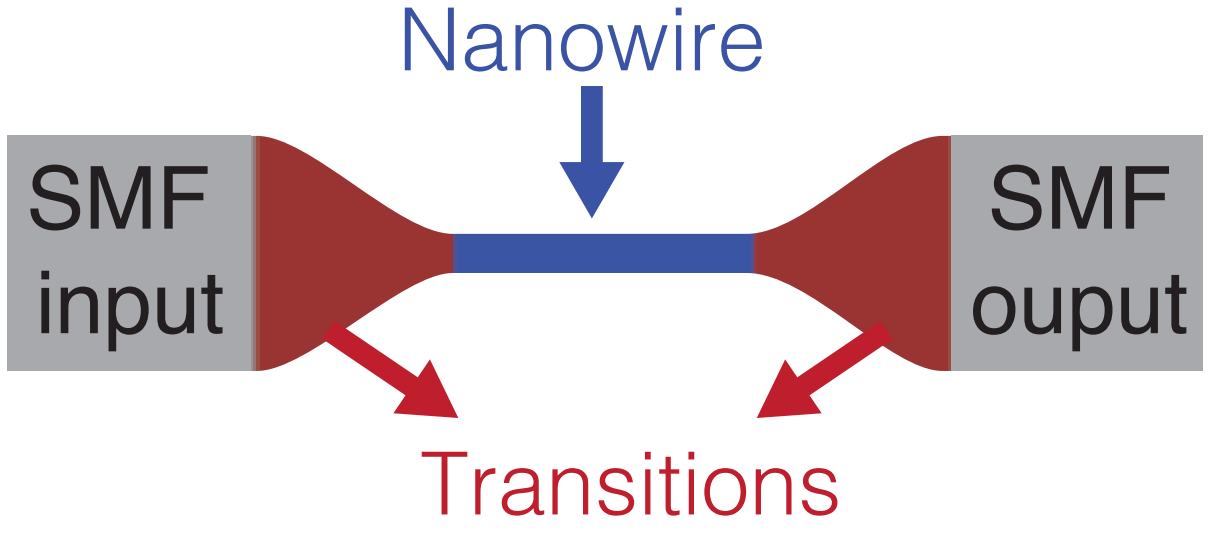
6.0

6.5

Frequency (GHz)

O. Florez et al. “Brillouin scattering self-cancellation,” Nat Comms, vol. 7, p. 11759, (2016).




Nanowire
SMF
input
SMF
ouput
Transitions

Displacement

As2S3 and Corning 7059 glass on fused

"Numerical calculations for thin films of

optic effect does not always dominate

the scattering cross section and that

silica substrates indicate that the **elasto-**

G.I. Stegeman - 1979

the corrugation mechanism must often

be taken into account.”

Johnson, S. G., et al. Phys. Rev. E, 65(6), 066611.

R. Normandin, et al, J. Opt. Soc. Am. 69, 1153-1165 (1979)

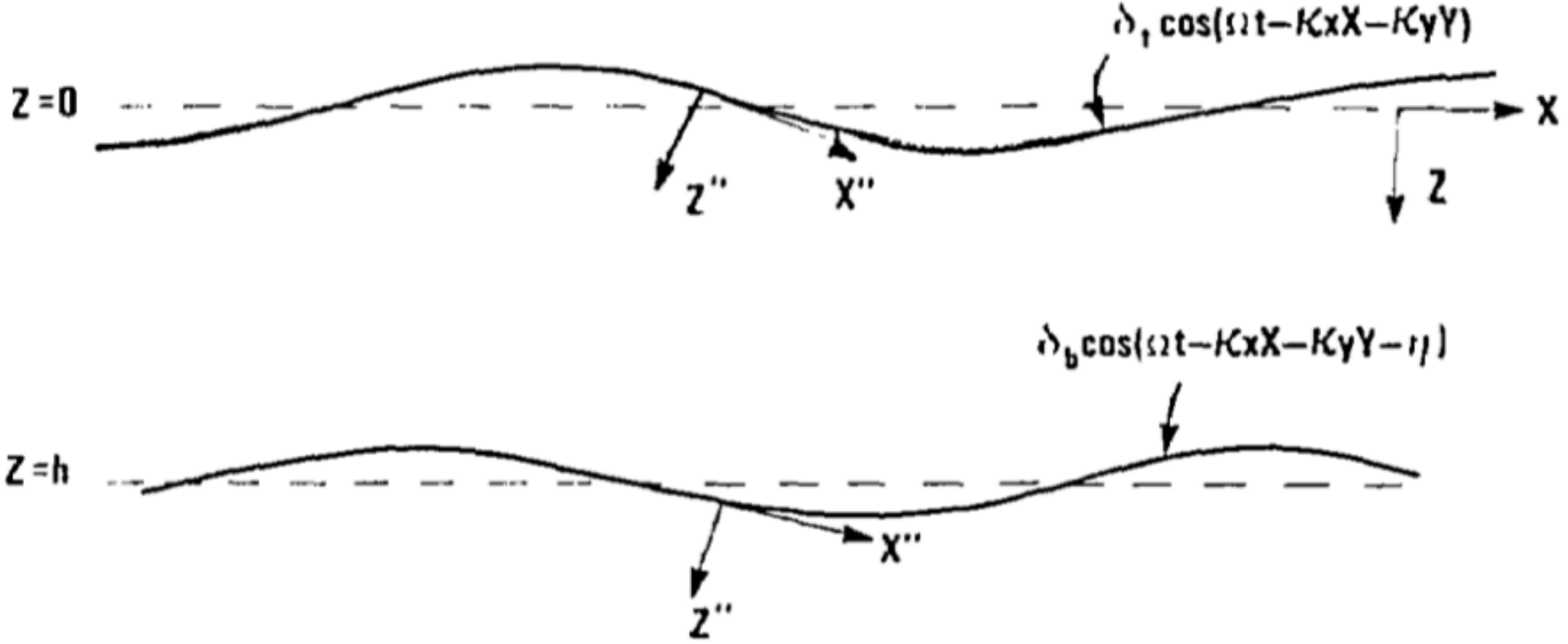


FIG. 4. Acoustically corrugated film surfaces.

Scattering of guided optical beams by surface acoustic waves in thin films

R. Normandin, V. C-Y. So, N. Rowell, and G. I. Stegeman
Department of Physics, University of Toronto, Toronto, Canada M5S 1A7
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