# Master Thesis

*Tuning of the Optical Beamforming Networks*

**Delft University of Technology**

Herminarto Nugroho

November 13, 2014

# Outline

# Project Overview

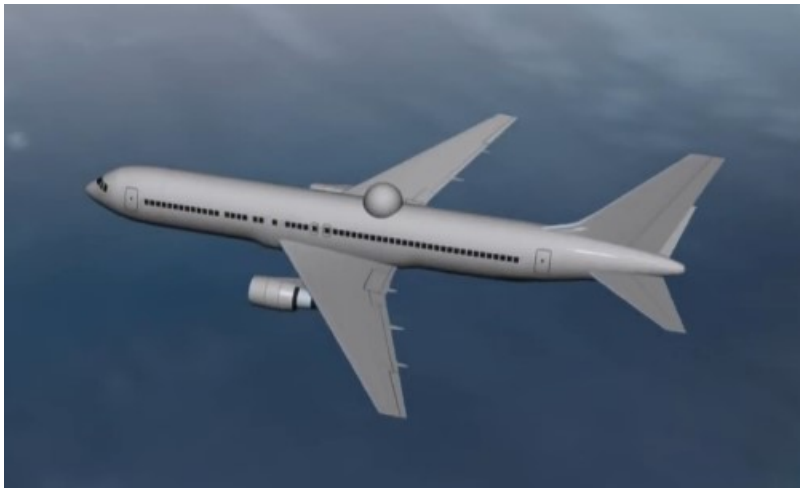


Figure: Step response of open loop

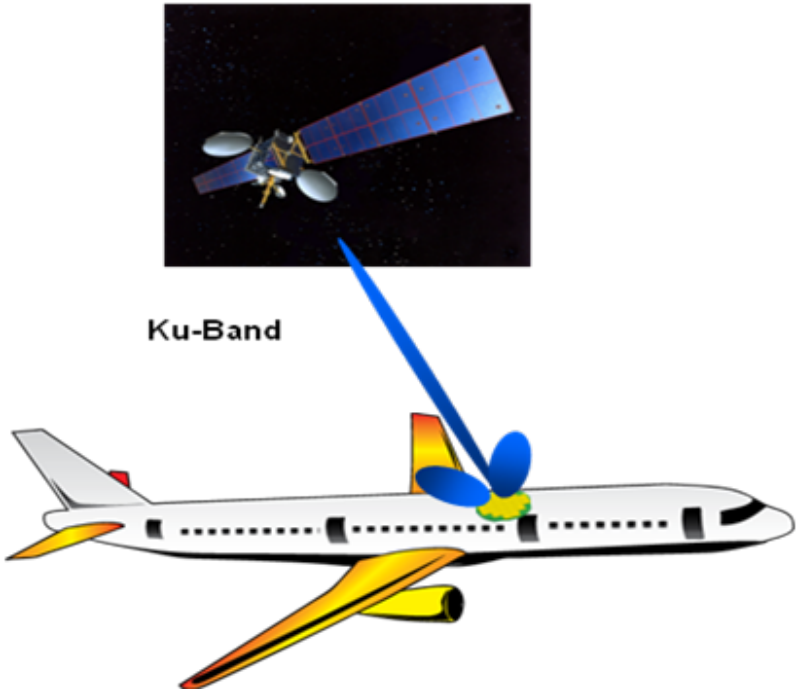



Figure: Delay estimation

# Project Overview

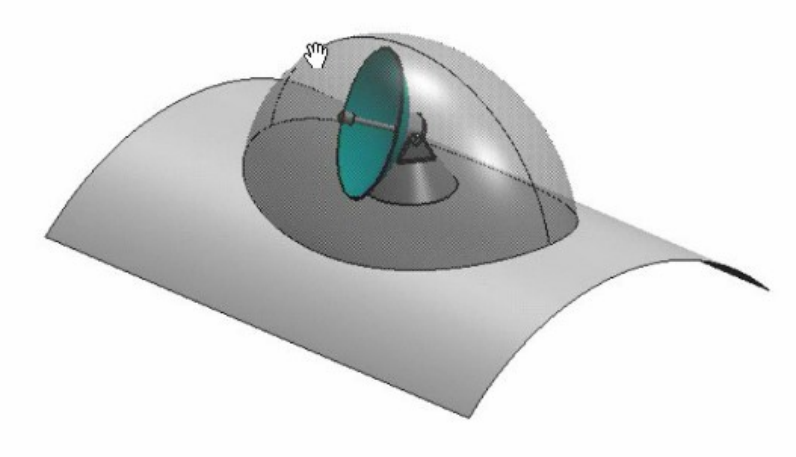


Figure: Step response of open loop

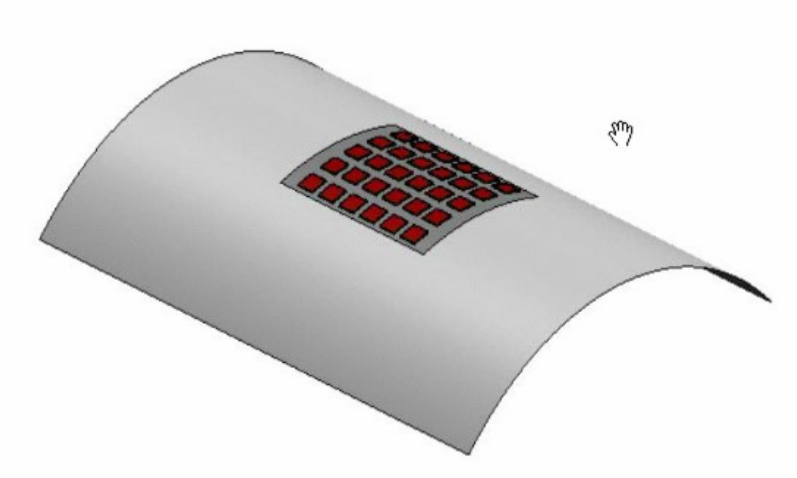


Figure: Delay estimation

# Phased Array Antennas

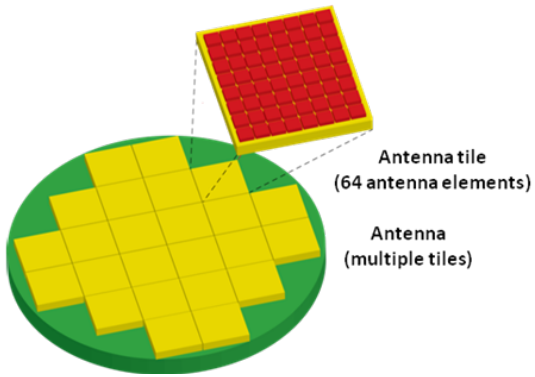



Figure: Step response of open loop

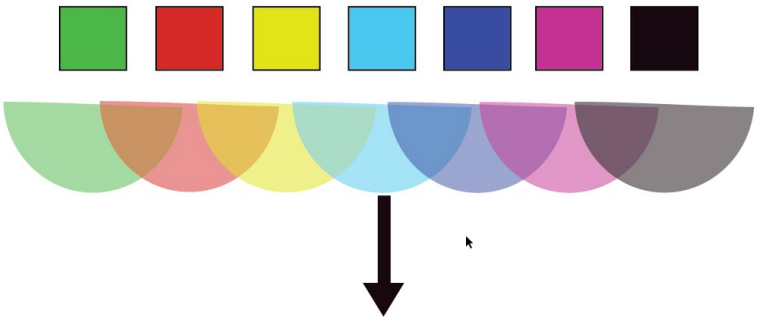


Figure: Step response of open

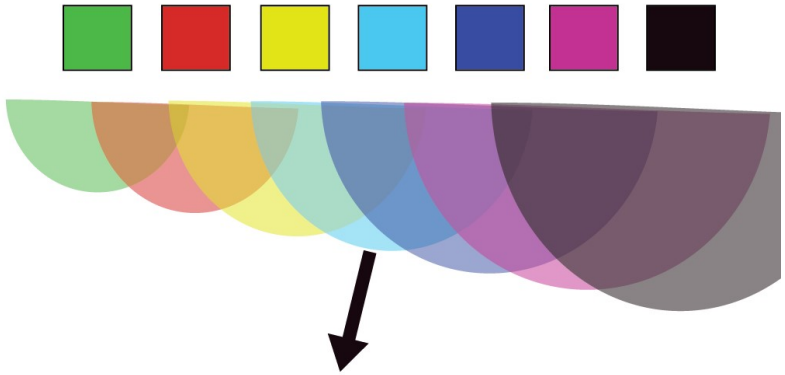


Figure: Delay estimation

# OBFN Chip

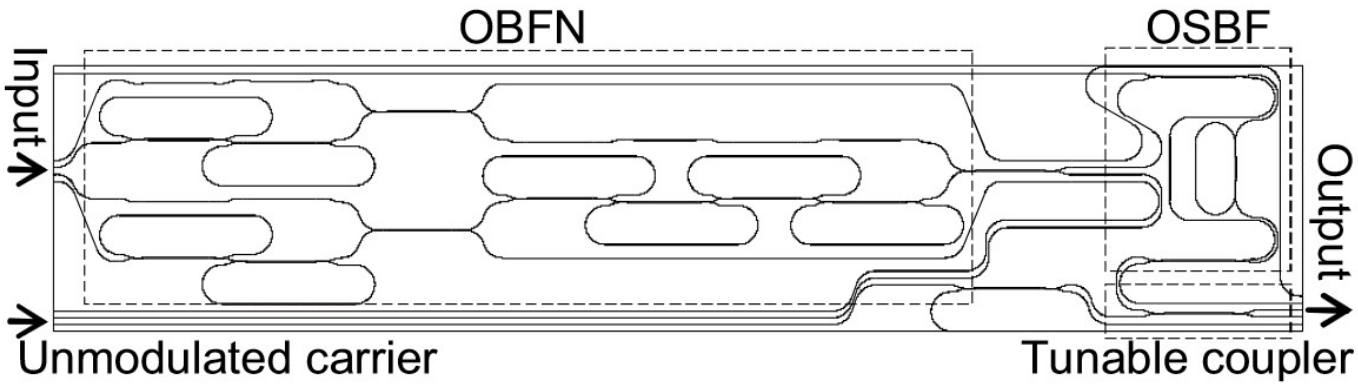



Figure: Step response of open loop

# Optical Ring Resonator (ORR)

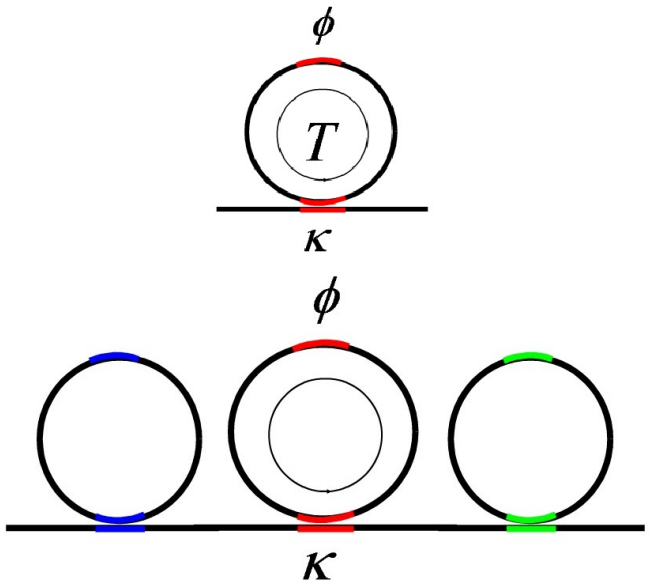



Figure: Step response of open loop

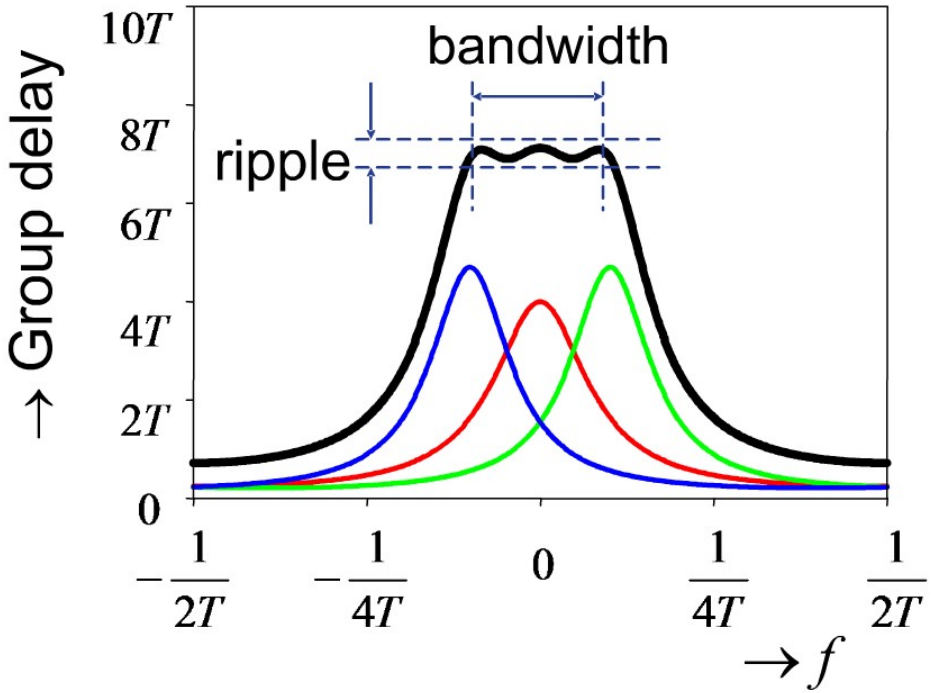



Figure: Delay estimation

# Parameters to be Tuned

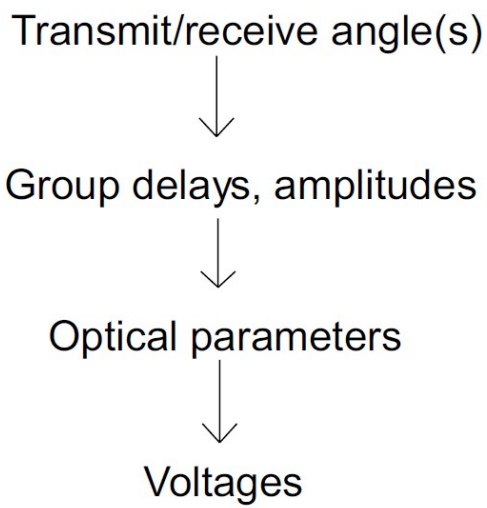
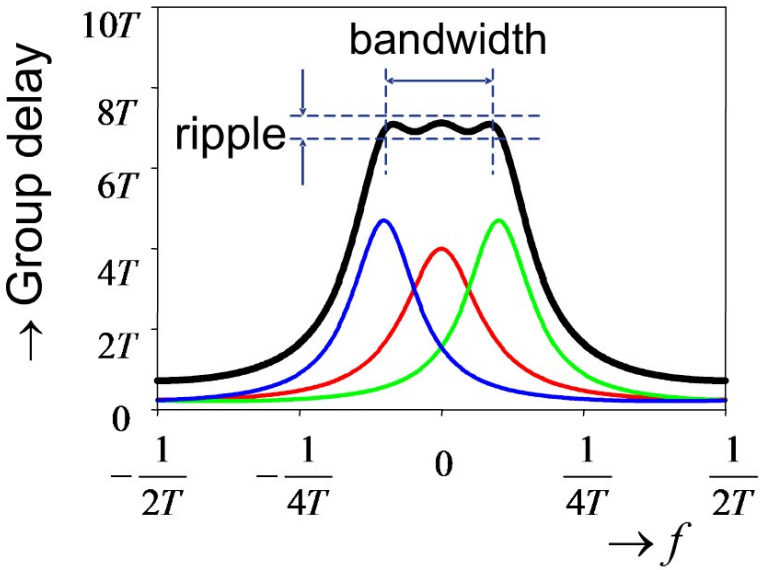



Figure: The Project layers

**Parameters to be Tuned: Optical Parameters**

Parameters to be tuned to get the desired goals are the optical parameters : $\kappa$, $\theta$, and $T$ of each ORR

# Desired Goals of Tuning




**Goals: Group delays, ripple and bandwidth**

Group delays : a certain value
ripple : flat
bandwidth : alligned with the spectrum of the modulated optical signal

# Last Page

## Summary

End of the beamer demo
with a *tidy* TU Delft lay-out.
Thank you!