

Basics in radartechnologie

113GHz aan niveaumeet radars
Zoek de verschillen.



113GHz aan radars



5 belangrijke stappen !



Wees bewust van DC waarde medium.



Kies de grootste hoorn

Vermijd hoge nozzles



Positioneer de radar (markering)



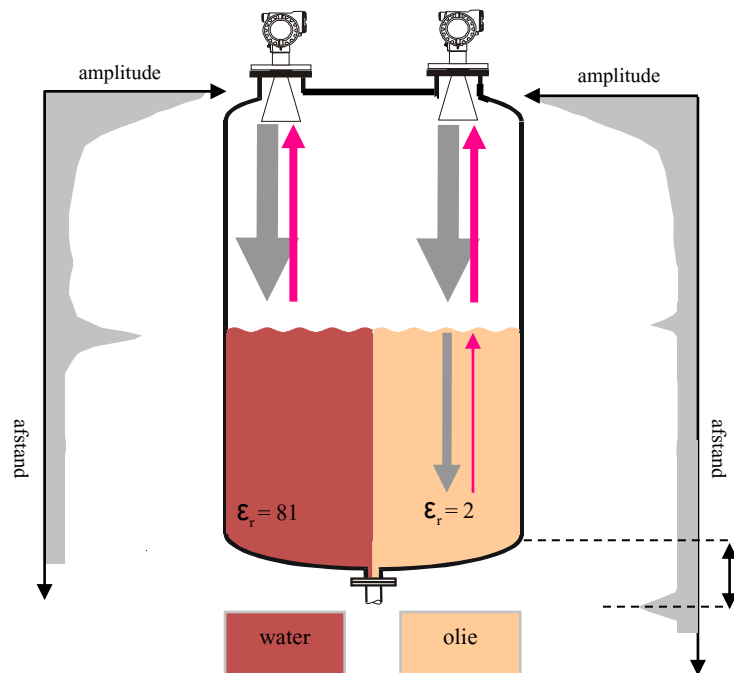
Stel ruis onderdrukingsfilter in.





DC waarde medium.

- DC (di-elektrische constante)
- Hoge dc levert hoog echo signaal
- Speelruimte in signaal / ruis





Hoorn, groot, groter, groots

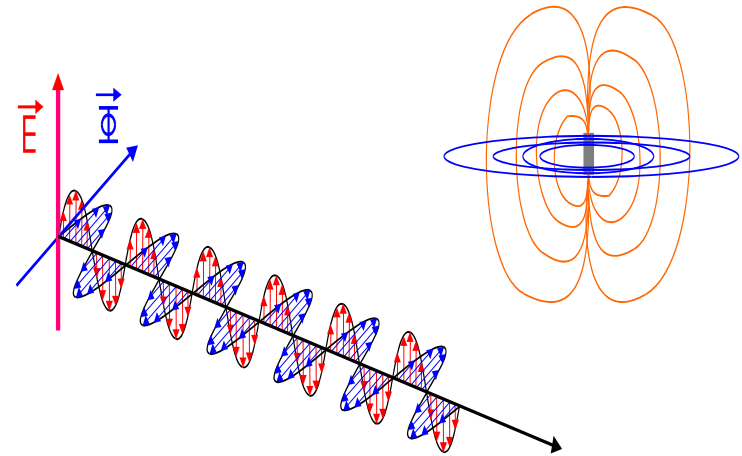
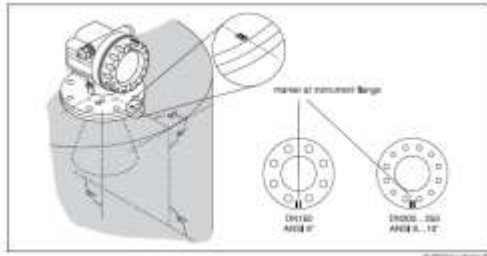
- Grote hoorn levert beter echo signaal op.
- Speelruimte in signaal / ruis





Radar Positie

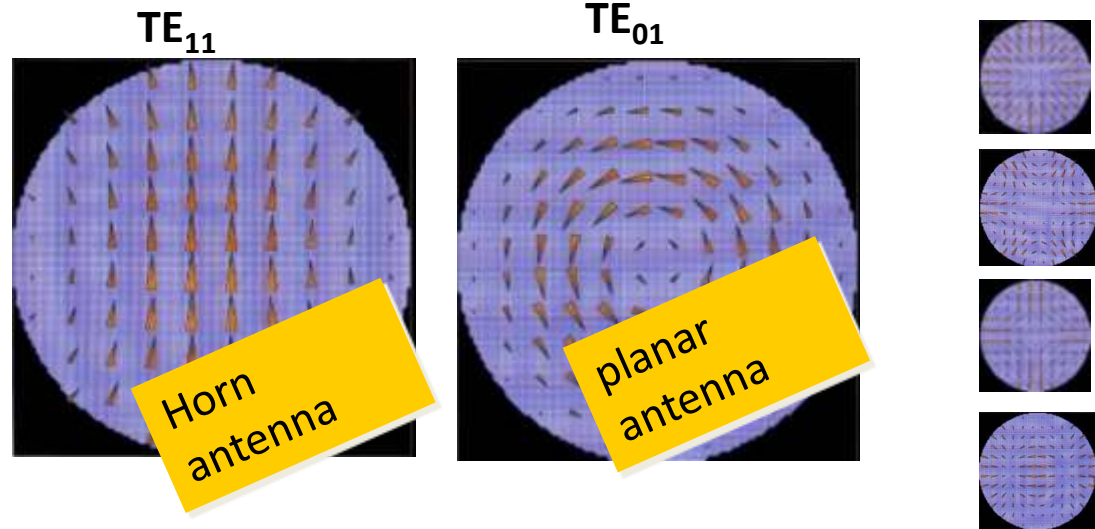
- Electro-magnetische golf
- Interferentie
 - Tankwand
 - roerwerk
 - coils





Radargolven

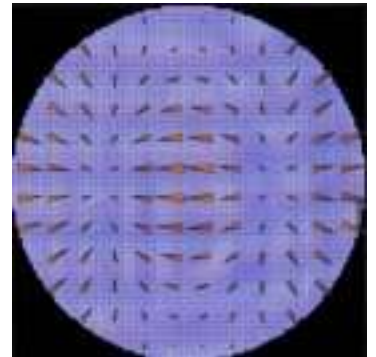
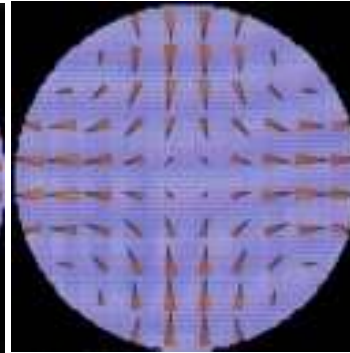
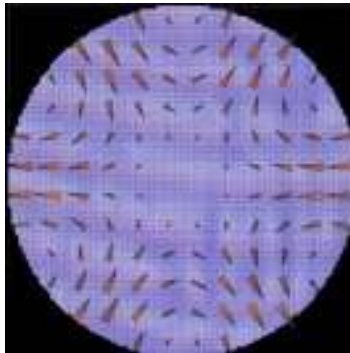
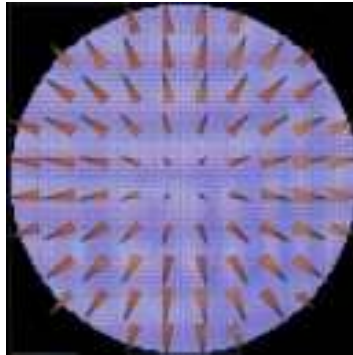
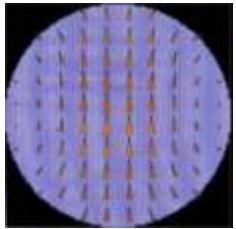
- Tank wordt onderdeel van het radar antenne systeem
- Radar modi





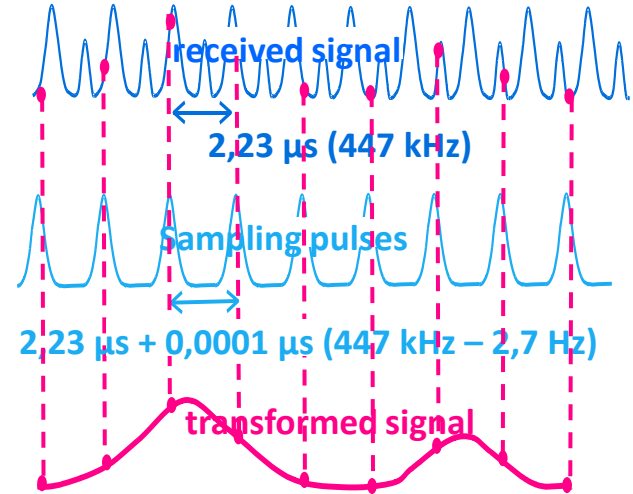
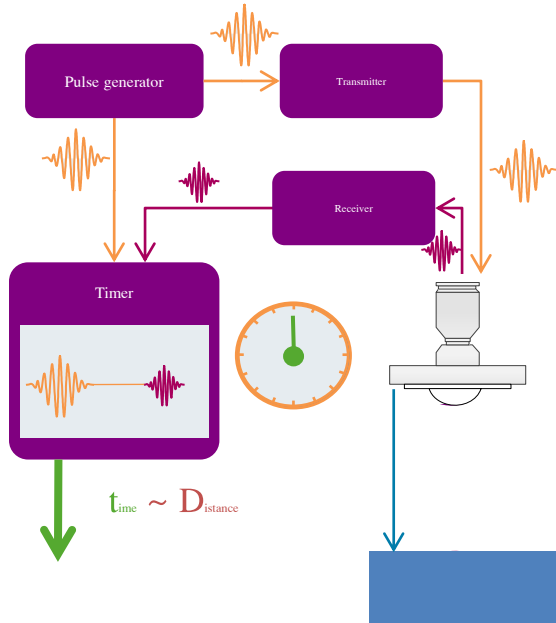
Radargolven

- Tank wordt onderdeel van het radar antenne systeem
- Radar modi





Puls Radartechnik

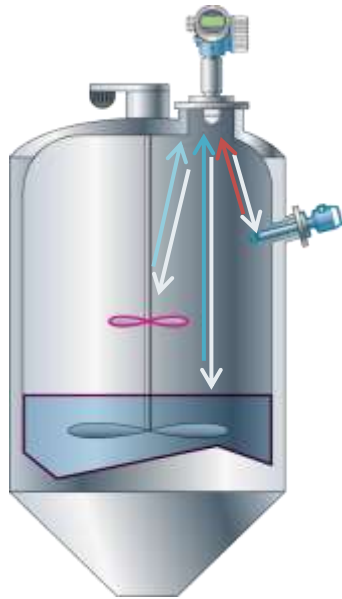


Instrumentatie & Analyse Dagen 2017

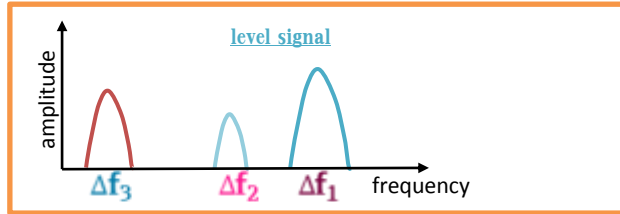
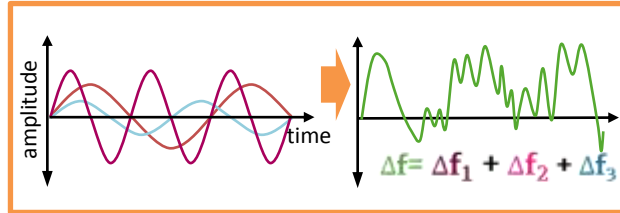
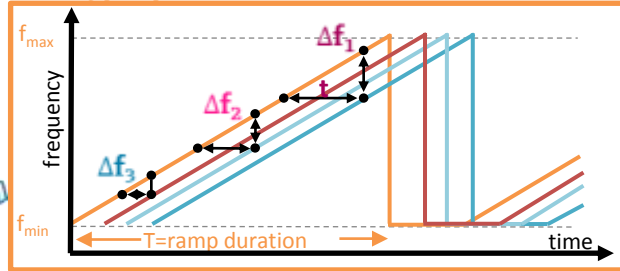




FMCW Radartechnik



Measuring principle



Fast Fourier Transformation

$\Delta f_1, \Delta f_2, \Delta f_3$





Vergelijking 6, 26, 80GHz

- Installatie op dezelfde nozzle.
- Meetbereik 5 m
- Tank bijna leeg (olie= 0,2 m)
- Tank met verwarmings-coil en roerwerk.





Hoorn, groot, groter, groots

- Grote hoorn levert beter echo signaal op.
- Speelruimte in signaal / ruis





6GHz, 150mm hoorn, 23°





24GHz, 100mm hoorn, 8°





80GHz, 80mm hoorn, 4°



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