# Far Field Measurement of Optical Sources

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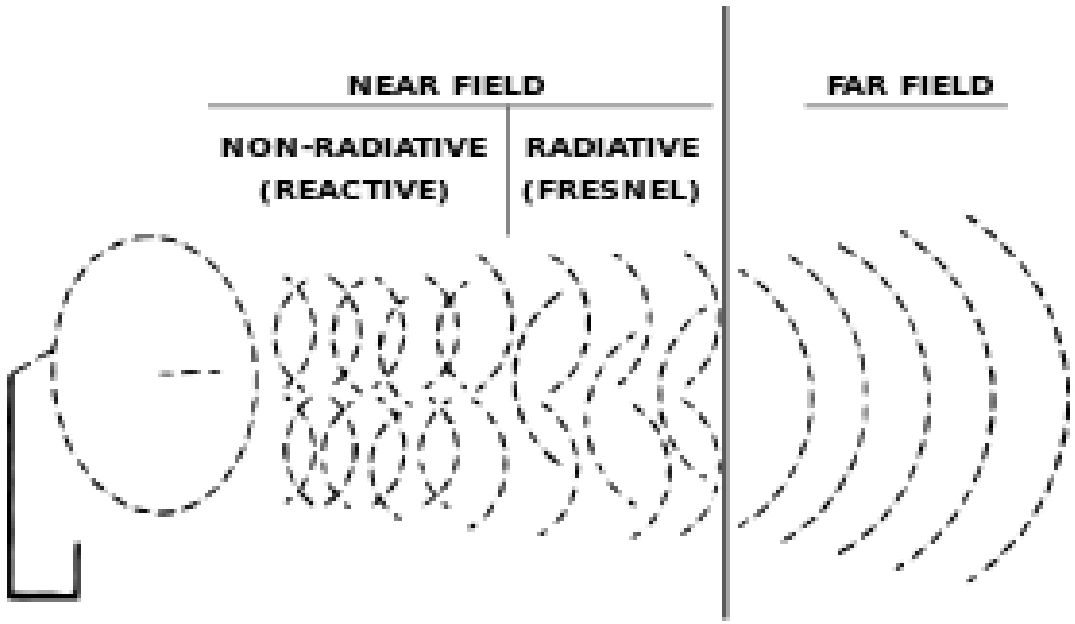
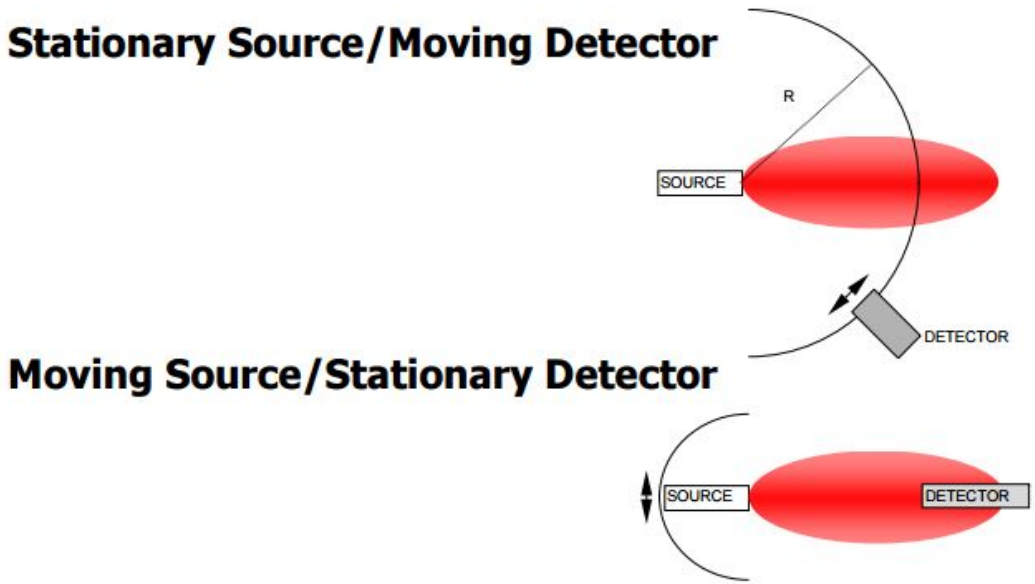
# WHAT IS FAR FIELD?

- For studying the radiation pattern of an electromagnetic radiation source, its field is classified in near field and far field regions. If the observation distance D, is such that:
  - $D \sim \lambda \implies$ near field regime
  - $D >> \lambda \implies$ far field regime

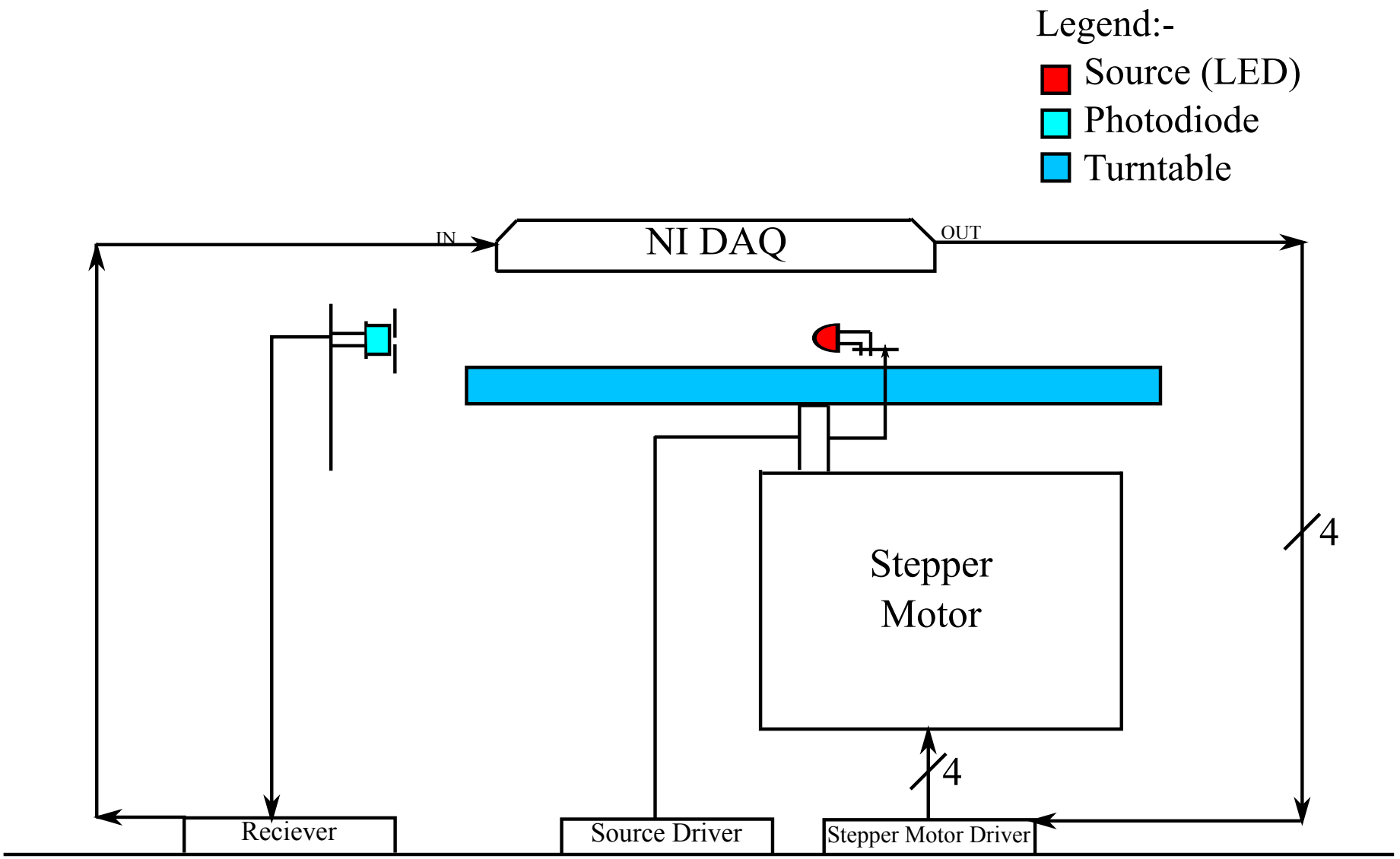


# CONVENTIONAL FAR FIELD MEASUREMENT TECHNIQUES

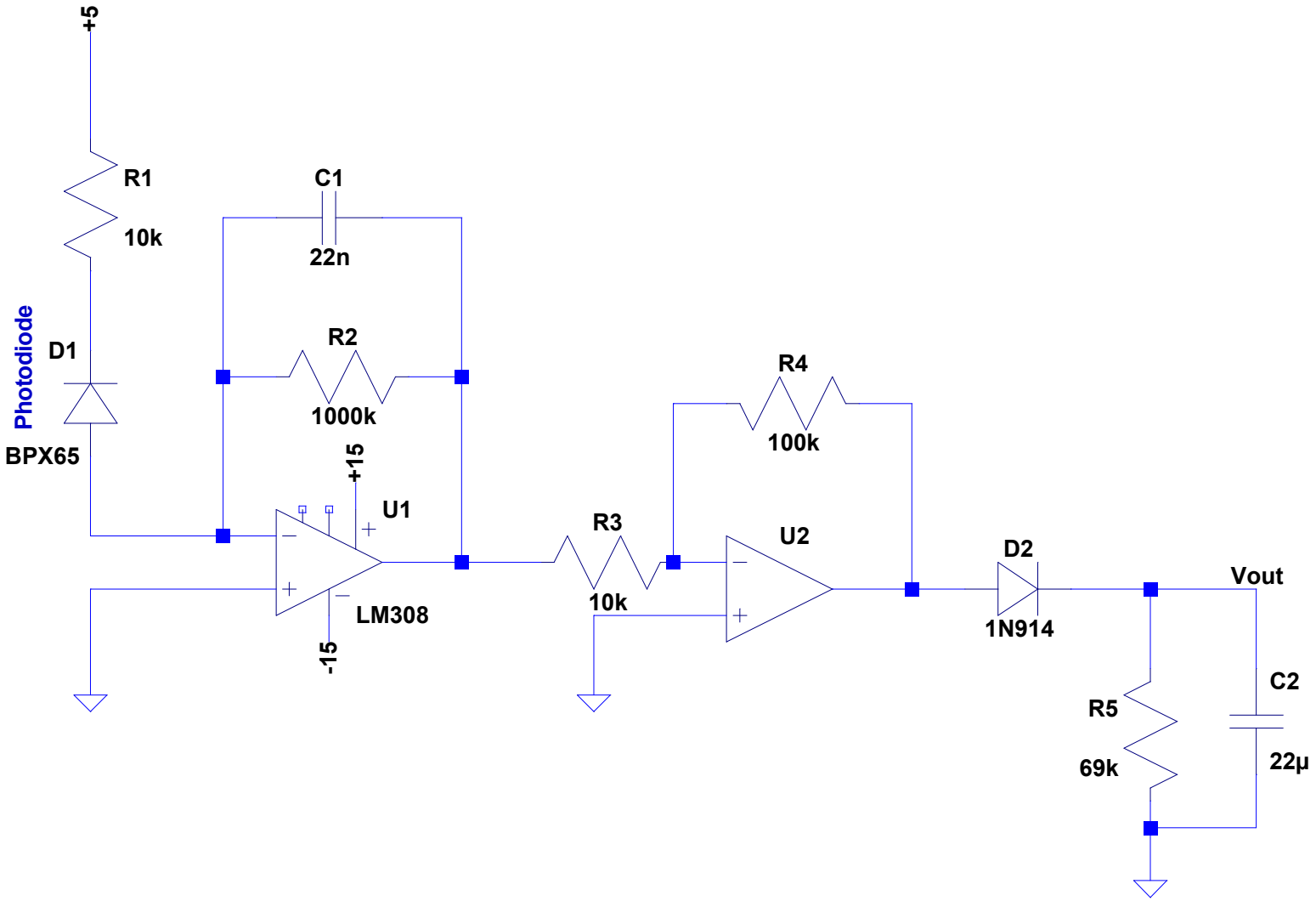



We have used the latter approach to measure the far field in which the source rotates and the detector is stationary.

# BLOCK DIAGRAM



# RECIEVER CIRCUIT

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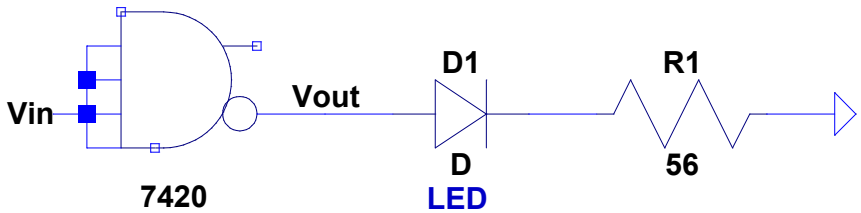
# SOURCE DRIVER AND MOTOR DRIVER

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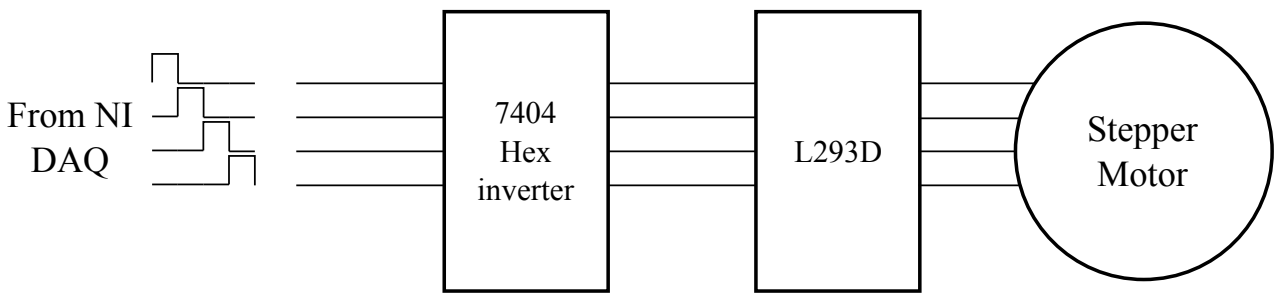
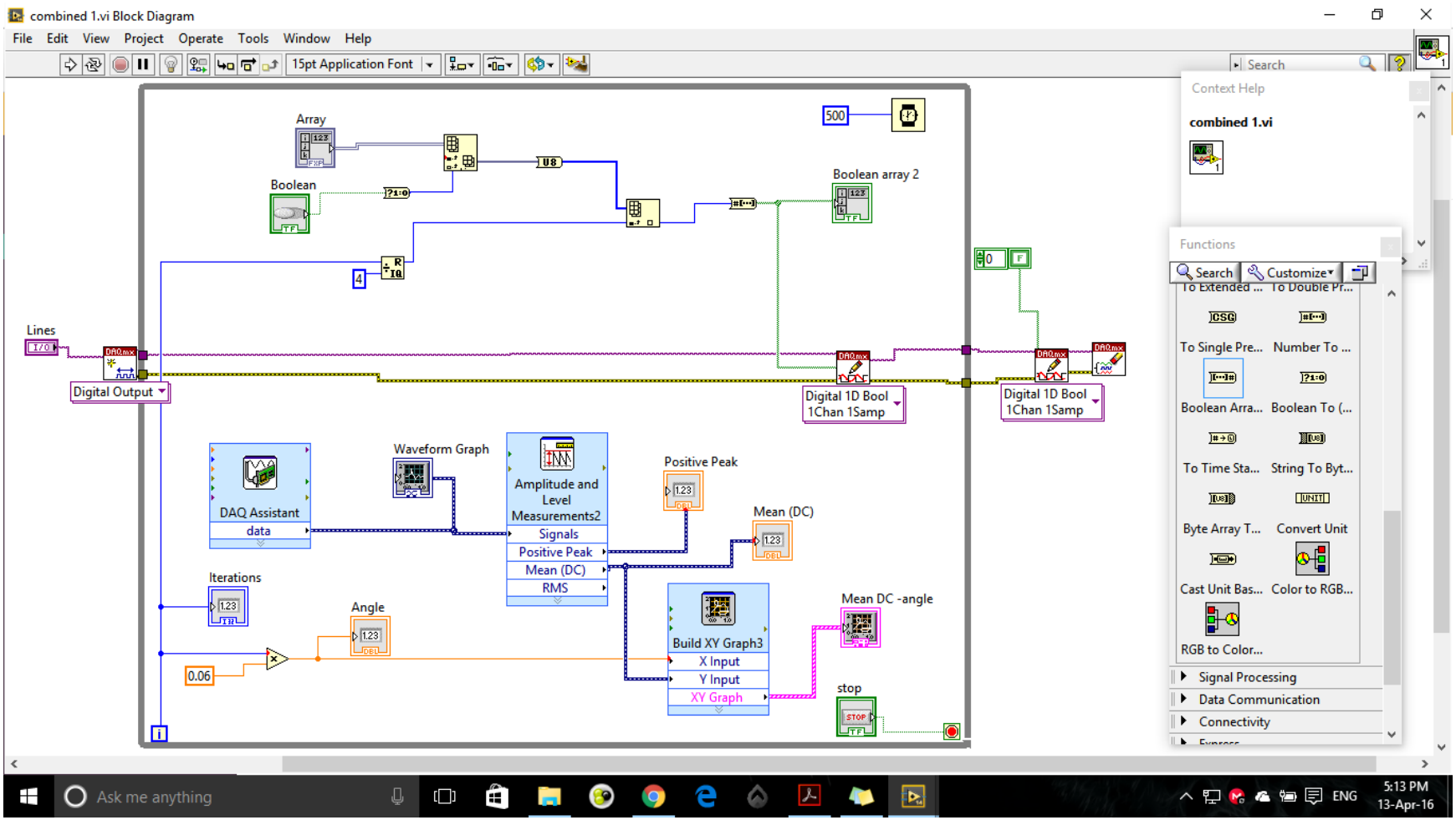


# LABVIEW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Signals
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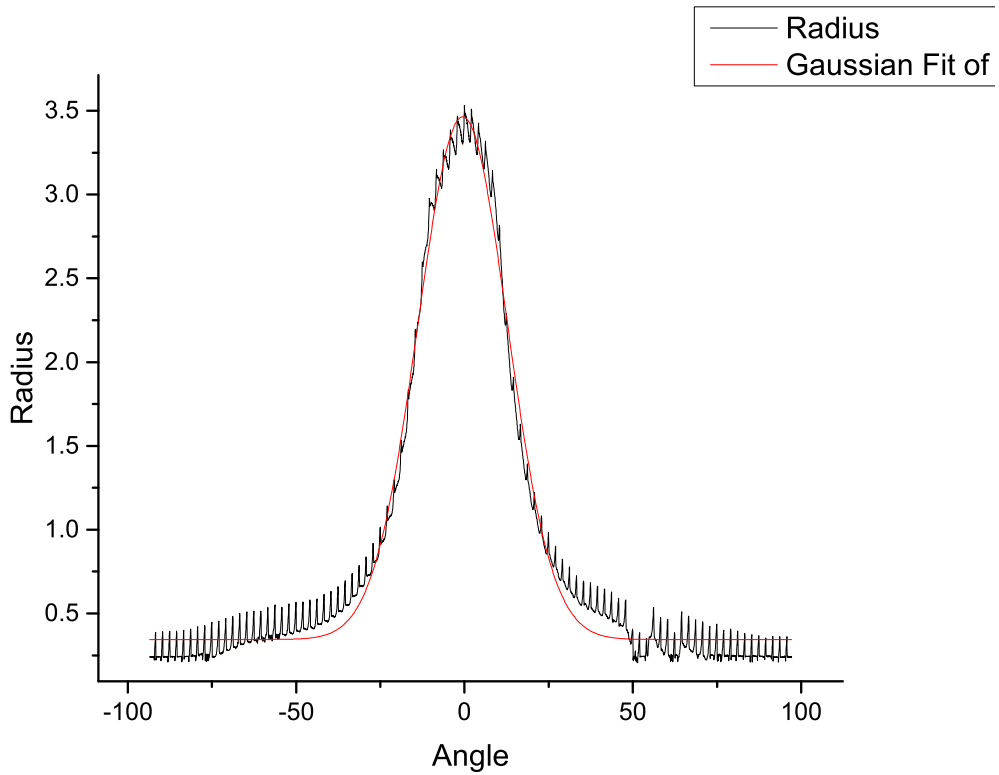
# RESULTS




Full width at Half Maximum (FWHM) intensity = $31.17^0$

# DEMONSTRATION

- In our demonstration, we plan to show the functioning of our apparatus. In the meantime, we intend to get the measurements of a few more sources like different coloured LEDs and laser diodes.