



OPTICS- AND RADAR-BASED OBSERVATIONS

F7003R

Pulse Modulation Techniques and Observations of the Atmosphere

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In this Assignment, *Problem 4 - Pulse modulation techniques and observations of the atmosphere*, ...

1 Studying pulse coding techniques

- 1.a Normalized ambiguity diagram
- 1.b Amplitude normalized auto-correlation function
- 1.c Radar system properties
- 1.d Detectability
- 1.e Properties of the ambiguity function
- 1.f Ambiguities in the diagram
- 1.g Pulse amplitude and pulse width of two radar systems
- 1.h Comparison of Barker coding and no coding
- 1.i Comparison of Barker and complementary coding
- 1.j Comparison of PRN and no coding
- 1.k Comparison of LFM and no coding

2 Reduction of effective height resolution

- 2.a Signal-to-noise ratio as function of time
- 2.b Scientific usability of obtained data plots
- 2.c Dynamical state of the atmosphere

A Appendix

References