



Recommendation ITU-R P.310-10
(08/2019)

**Definitions of terms relating to propagation
in non-ionized media**

P Series
Radiowave propagation



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Foreword

The role of the Radiocommunication Sector is to ensure the rational, equitable, efficient and economical use of the radio-frequency spectrum by all radiocommunication services, including satellite services, and carry out studies without limit of frequency range on the basis of which Recommendations are adopted.

The regulatory and policy functions of the Radiocommunication Sector are performed by World and Regional Radiocommunication Conferences and Radiocommunication Assemblies supported by Study Groups.

Policy on Intellectual Property Right (IPR)

ITU-R policy on IPR is described in the Common Patent Policy for ITU-T/ITU-R/ISO/IEC referenced in Resolution ITU-R 1. Forms to be used for the submission of patent statements and licensing declarations by patent holders are available from <http://www.itu.int/ITU-R/go/patents/en> where the Guidelines for Implementation of the Common Patent Policy for ITU-T/ITU-R/ISO/IEC and the ITU-R patent information database can also be found.

Series of ITU-R Recommendations

(Also available online at <http://www.itu.int/publ/R-REC/en>)

Series	Title
BO	Satellite delivery
BR	Recording for production, archival and play-out; film for television
BS	Broadcasting service (sound)
BT	Broadcasting service (television)
F	Fixed service
M	Mobile, radiodetermination, amateur and related satellite services
P	Radiowave propagation
RA	Radio astronomy
RS	Remote sensing systems
S	Fixed-satellite service
SA	Space applications and meteorology
SF	Frequency sharing and coordination between fixed-satellite and fixed service systems
SM	Spectrum management
SNG	Satellite news gathering
TF	Time signals and frequency standards emissions
V	Vocabulary and related subjects

Note: This ITU-R Recommendation was approved in English under the procedure detailed in Resolution ITU-R 1.

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Definitions of terms relating to propagation in non-ionized media

(1951-1959-1966-1970-1974-1978-1982-1986-1990-1992-1994-2019)

The ITU Radiocommunication Assembly,

considering

that it is important to have agreed definitions of propagation terms used in the texts of ITU-R Study Groups,

recommends

that the list of definitions annexed hereto be adopted for incorporation in the vocabulary.

Annex**Vocabulary of terms used in radio propagation in non-ionized media**

	Term	Definition
A.	<i>Terms related to radio waves</i>	
A1.	<i>Cross-polarization</i>	The appearance, in the course of propagation, of a polarization component which is orthogonal to the expected polarization.
A2.	<i>Cross-polarization discrimination</i>	For a radio wave transmitted with a given polarization, the ratio at the reception of the power received with the expected polarization to the power received with the orthogonal polarization. <i>Note 1</i> – The cross-polarization discrimination depends both on the characteristics of the antenna and on the propagation medium
A3.	<i>Cross-polarization isolation</i>	For two radio waves transmitted with the same frequency with the same power and orthogonal polarization, the ratio of the co-polarized power in a given receiver to the cross-polarized power in that receiver.
A4.	<i>Depolarization</i>	A phenomenon by virtue of which all or part of the power of a radio wave transmitted with a defined polarization is transferred to another polarization.
A5.	<i>Co-polarization</i>	The appearance, in the course of propagation, of a polarization component which is identical to the expected polarization.
A6.	<i>Polarization mismatch loss</i>	The ratio of: a) the power received by an antenna from a given plane wave of arbitrary polarization to b) the power that would be received by the same antenna from a plane wave of the same power flux density and propagation direction, whose polarization has been adjusted for maximum received power.