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Sommario/riassunto	This textbook introduces the transmission of digital signals over disturbed channels, emphasizing an intuitive and mathematically grounded explanation of baseband transmission. It recaps essential fundamentals of signal and system theory and explores functional interdependencies in baseband transmission to advance the understanding of baseband transmission concepts. The wired transmission using copper cable is highlighted as an important transmission technique. The copper cable’s transmission characteristics are described using classical electrical engineering and system theory methods. Baseband techniques are applied to the transmission over the linearly distorting channel copper cable, with discussions on filtering and equalization. The textbook includes detailed derivations, numerical examples, solved exercises and various illustrations. From the Content Signal and System Theory Fundamentals; Fundamentals of Digital Baseband Transmission; Description of Wired Transmission over Copper Cable Using Transmission Line Theory; Digital Baseband

Transmission via Linearly Distorting Channel; Appendices with Overviews of Signal and System Theory Authors Prof. Dr.-Ing. Christoph Lange is affiliated with the Hochschule für Technik und Wirtschaft (University of Applied Sciences) in Berlin, Germany, and works in the field of communications engineering and communication networks. Previously, after studying and obtaining his doctorate at the University of Rostock, Germany, he worked for many years in various technology innovation areas for a large telecommunications network operator in Berlin. Prof. Dr.-Ing. habil. Andreas Ahrens is affiliated with the Hochschule Wismar (University of Applied Sciences: Technology, Business and Design) in Wismar, Germany, and works in the field of communications engineering as well as signal and system theory. He completed his studies, doctorate, and habilitation at the University of Rostock, Germany. Afterwards he accomplished a research stay at the University of Southampton, United Kingdom, and worked as a University lecturer and researcher at the University of Rostock. The translation was done with the help of artificial intelligence. A subsequent human revision was done primarily in terms of content. This book is a translation of an original German edition. The translation was done with the help of artificial intelligence (machine translation by the service DeepL.com). A subsequent human revision was done primarily in terms of content, so that the book will read stylistically differently from a conventional translation.