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Descrizione fisica	1 online resource (360 pages) : illustrations
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Sommario/riassunto	"Active Disturbance Rejection Control has been studied since the 19th century. The main idea is to simplify the plant description so as to group all disturbances, foreign and internal, and all unknown, or ignored, quantities and expressions into a single disturbance term. We proceed to estimate the effects of this disturbance in some accurate manner and devise the means to cancel its effects using the gathered estimate as part of the feedback control action. Active Disturbance Rejection Control of Dynamic Systems describes the linear control of uncertain nonlinear systems. The net result is a practical controller design approach that is simple, surprisingly robust, while guaranteeing the convergence to small neighborhoods of desired equilibria or to tracking errors that are as close to zero as desired. The methodology differs from current robust feedback controllers characterized either by complex matrix manipulations and parameter adaption schemes or, in other cases, by induced high-frequency noises through the classical "chattering" phenomenon. The approach contains many of the cornerstones, or philosophical features, of Model-Free Control and ADRC while exploiting flatness and GPI control in an efficient manner for linear, nonlinear, monovariable and multivariable systems including those exhibiting inputs delays. This book contains successful experimental laboratory case studies of diverse engineering nature,

especially mechanical, electro-mechanical, robotics, mobile robotics,
and power electronics systems problems." -- back cover.
