

1. Record Nr.	UNINA9910483776003321
Titolo	Control of overhead power lines with unmanned aerial vehicles (UAVs) / / editors, Yevgen I. Sokol, Artur O. Zaporozhets
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2021] ©2021
ISBN	3-030-69752-5
Descrizione fisica	1 online resource (ix, 157 pages) : illustrations (some color)
Collana	Studies in Systems, Decision and Control ; ; Volume 359
Disciplina	621.319
Soggetti	Electric lines - Maintenance and repair Drone aircraft
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	This book is devoted to the development of complex methods and means of their implementation with using UAVs aimed for improving the safety and efficiency of the energy system. The scientific problem of complex automated monitoring of the energy system objects with using UAVs has been solved, including the control of its elements in the visible and infrared range, the acoustic spectrum, as well as by the levels of the electric field strength. The scientific foundations of mathematical, physical and statistical modeling of electromagnetic and acoustic fields in the elements of electric power objects of complex spatial configurations have been created, taking into account the possibility of the appearance of such nonlinear processes as corona discharges and breakdowns at long air gaps. Improved methods are proposed for determining the exact location of accidents on power lines using UAVs on the basis of the developed mathematical models and the obtained analytical expressions. Conceptual foundations for the creation of methods and means for monitoring the state of insulation, lightning protection systems and the integrity of the structures of electric power facilities with using UAVs have been formed.

