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**ENVIRONMENTAL
MONITORING
USING
ELECTROMAGNETIC
AND ACOUSTIC
RADIATIONS
OF OBJECTS,
EXISTING
GROUND
AND SPACE
RADIO
SYSTEMS**

NATIONAL ACADEMY OF SCIENCES OF UKRAINE
O. Ya. USIKOV INSTITUTE FOR RADIOPHYSICS
AND ELECTRONICS OF THE NAS OF UKRAINE

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The monograph considers the solution to the problem of using the own acoustic and secondary electromagnetic radiations of objects of anthropogenic origin in active-passive monitoring systems. Techniques for estimating the range of detection of acoustic radiation sources, a method for determining radar signatures of objects based on optical and acoustic portraits and the selection of a useful signal against the background of noise, methods for estimating the range and RCS of aerial objects, methods for the sea surface state remote diagnostics, the troposphere of the Earth by the radiation of TV and radio broadcasting stations and global navigation systems, a model of non-stationary disturbances are proposed. New methods are considered to describe non-stationary processes and signals using Kravchenko-Rvachev distribution functions and nested semi Markov processes.

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