Conclusion

The rapid introduction of microwave sensing methods and means into airspace observations in the last 10–15 years was a consequence, as we have shown above, of the significantly new (in relation to optical and infrared bands) physical information content of microwave sensing in studying terrestrial objects (the surface and the atmosphere). The development and evolution of instruments and research missions of microwave sensing has occurred, certainly, in a quite inhomogeneous and irregular manner. Nevertheless, at the present time, none of potential large-scale satellite missions on earth investigation fails to employ passive and active radiophysical instruments in some configuration. This tendency will doubtless be kept under close observation. And, moreover, the relative weight of microwave observation systems in the total remote sensing program will even, most likely, be augmented.

The author believes that his mission will be completed, if the physical fundamentals of microwave remote sensing, set forth in this book, will help the specialists in various geophysical disciplines – meteorologists, geophysicists, oceanologists, geologists, soil scientists, geographers – to understand those new information advantages that are embedded in microwave sensing, and will impel them to be actively engaged in a (fairly difficult) process of assimilation of remote microwave information. On the other hand, the author hopes that the specialists of other disciplines – radiophysicists, radio-engineers, electronics specialists – on acquaintance with the present book will discover for themselves new areas for the application of their abilities. The joint efforts of the specialists in various geophysical directions will, doubtless, be rewarded, and we shall become witnesses of new (and surprising) discoveries in various geophysical disciplines directed at studying the earth, as, for example, has taken place in oceanology.