
Preface

The goal of these lectures is to describe the essence of the orbit method for non-experts and to attract the younger generation of mathematicians to some old and still unsolved problems in representation theory where I believe the orbit method could help.

It is said that to become a scientist is the same as to catch a train at full speed. Indeed, while you are learning well-known facts and theories, many new important achievements happen. So, you are always behind the present state of the science. The only way to overcome this obstacle is to “jump”, that is, to learn very quickly and thoroughly some relatively small domain, and have only a general idea about all the rest.

So, in my exposition I deliberately skip many details that are not absolutely necessary for understanding the main facts and ideas. The most persistent readers can try to reconstruct these details using other sources. I hope, however, that for the majority of users the book will be sufficiently self-contained.

The level of exposition is different in different chapters so that both experts and beginners can find something interesting and useful for them. Some of this material is contained in my book [Ki2] and in the surveys [Ki5], [Ki6], and [Ki9]. But a systematic and reasonably self-contained exposition of the orbit method is given here for the first time.

I wrote this book simultaneously in English and in Russian. For several reasons the English edition appears later than the Russian one and differs from it in the organization of material.

Sergei Gelfand was the initiator of the publication of this book and pushed me hard to finish it in time.

Craig Jackson read the English version of the book and made many useful corrections and remarks.

The final part of the work on the book was done during my visits to the Institut des Hautes Études Scientifiques (Bures-sur-Yvette, France) and the Max Planck Institute of Mathematics (Bonn, Germany). I am very grateful to both institutions for their hospitality.

In conclusion I want to thank my teachers, friends, colleagues, and especially my students, from whom I learned so much.