

# CONTENTS

I. <u>Population genetics</u> . . . . .	1
[1] KIMURA, M. A stochastic model of compensatory neutral evolution . . . . .	2
[2] OHTA, T. Some models for treating evolution of multigene families and other repetitive DNA sequences . . . . .	19
[3] DONNELLY, P.J. and TAVARÉ, S. A genealogical description of the infinitely-many neutral alleles model . . . . .	27
[4] ITATSU, S. Equilibrium measures of the stepping stone model with selection in population genetics . . . . .	36
[5] OGURA, Y. and SHIMAKURA, N. Asymptotic properties for Kimura's diffusion model with altruistic allele . . . . .	53
II. <u>Measure-valued diffusion processes related to population genetics</u> . . . .	71
[6] ETHIER, S. and KURTZ, T. The infinitely-many-alleles model with selection as a measure-valued diffusion . . . . .	72
[7] SHIGA, T. Multi-allelic Gillespie-Sato diffusion models and their extension to infinite allelic ones . . . . .	87
[8] SHIMIZU, A. Stationary distribution of a diffusion process taking values in probability distributions on the partitions . . . . .	100
III. <u>Neurophysiology</u> . . . . .	115
[9] KALLIANPUR, G. and WOLPERT, R. Weak convergence of stochastic neuronal models . . . . .	116
[10] SATO, S. Note on the Ornstein-Uhlenbeck process model for stochastic activity of a single neuron . . . . .	146
IV. <u>Fluctuation in living cells</u> . . . . .	157
[11] OOSAWA, F., TSUCHIYA, M. and KUBORI, T. Fluctuation in living cells: effect of field fluctuation and asymmetry of fluctuation . . . . .	158
[12] WATANABE, H. Some aspects of Oosawa's equation . . . . .	171
V. <u>Mathematical methods related to other problems in biology, epidemiology, population dynamics, etc.</u> . . . . .	175
[13] GANI, J. Problems of epidemic modelling . . . . .	176
[14] NEGORO, A. and TSUCHIYA, M. Markov semigroups associated with one-dimensional Lévy operators --regularity and convergence-- . . . . .	185

- [15] OKADA, N.  
On some conditions for diffusion processes to stay on the boundary  
of a domain . . . . . 194
- [16] FIGARI, R., PAPANICOLAOU, G. and RUBINSTEIN, J.  
The point interaction approximation for diffusion in regions with  
many small holes . . . . . 202
- [17] SATO, K.  
Unimodality and bounds of modes for distributions of generalized  
sojourn times . . . . . 210
- [18] UCHIYAMA, K.  
Fluctuation in population dynamics . . . . . 222