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Modelling quantitative genetics: how to be genetically explicit

There are two main approaches to modelling genetic evolution. On the one hand, we can represent alleles as discrete values. On the other hand, we can represent alleles as a continuum of values. Even if both representations are used in individual-based simulations to study evolutionary processes, the dynamics that they generate can be different for the same problem. The difference in variance is the most problematic. We are presenting a comparative analysis of the discrete versus continuous allele representation in evolutionary individual-based simulations. We compare both approaches to theoretical predictions, such as mutation-selection balance, different contexts and effect of the number of loci, selection strength and mutation effect size.