# SIMPROF Types (1-4)

The first dialog box from running **Analyse>SIMPROF**, however, is of a new option to PRIMER 7, a choice of 4 types of SIMPROF test, which cover all 2 $\times$ 2 combinations of analysing samples or variables and permuting within samples or variables. The default, described above, is now referred to as a *Type 1* test, in which similarities are calculated between all pairs of samples and the profiles recalculated under the null hypothesis by permuting entries of the data matrix separately within variables, across the samples. *Type 2* and *Type 3* SIMPROF tests concern analysis of variables in which, for example, the profile consists of index of association values calculated among species. Dependent on the hypothesis being tested this can either involve again permuting within variables across samples (Type 2) or within samples across suitably standardised species (Type 3). Chapter 7 of CiMC gives the motivation and examples for both Type 2 and 3 tests, seen again in Section 10, based on Somerfield PJ & Clarke KR 2013, *J Exp Mar Biol Ecol* 449: 261-273. The final option (*Type 4*) in this dialog, analysing samples and permuting within samples, has been included purely for completeness but has not been described and seems less likely to be practically useful.

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Revision #2
Created 17 June 2024 22:31:27 by Arden
Updated 21 January 2025 23:05:37 by Abby Miller