**Data S4. PERMDISP test results at coral cover by site level of aggregation**. Distance-based test for homogeneity of multivariate dispersions. Zones by environment are abbreviate as follow: CG\_exposed: Coral ground exposed, BR\_sheletered: back reef sheltered; RF\_sheltered/exposed: reef front sheltered and exposed respectively; Irregular\_sheltered / exposed: lacking of clear scheme of geomorphic zonation zones in sheltered and exposed to wave environments. P(perm): permutational p-value, t: statistic pseudo t

*Resemblance worksheet*

Name: LCC by site

Data type: Similarity

Selection: All

Transform: Square root

Resemblance: S17 Bray-Curtis similarity

Group factor: Geozone\_environment

Number of permutations: 9999

Number of groups: 7

Number of samples: 95

*DEVIATIONS FROM CENTROID*

F: 1.4975 df1: 6 df2: 88

P(perm): 0.3422

*PAIRWISE COMPARISONS*

Groups t P(perm)

(CG\_exposed,BR\_sheltered) 2.4199 0.0335

(CG\_exposed,RF\_sheltered) 1.079 0.4587

(CG\_exposed,RF\_exposed) 1.7349 0.144

(CG\_exposed,S&G\_exposed) 0.58297 0.5918

(CG\_exposed,irregular\_sheltered) 0.85895 0.4257

(CG\_exposed,irregular\_exposed) 0.047955 0.9652

(BR\_sheltered,RF\_sheltered) 1.2631 0.3167

(BR\_sheltered,RF\_exposed) 0.93158 0.4586

(BR\_sheltered,S&G\_exposed) 1.6507 0.1771

(BR\_sheltered,irregular\_sheltered) 1.1043 0.3666

(BR\_sheltered,irregular\_exposed) 0.74763 0.7254

(RF\_sheltered,RF\_exposed) 1.2873 0.3576

(RF\_sheltered,S&G\_exposed) 1.2579 0.3372

(RF\_sheltered,irregular\_sheltered) 1.1681 0.4533

(RF\_exposed,S&G\_exposed) 0.97868 0.4064

(RF\_exposed,irregular\_sheltered) 0.49268 0.6661

(RF\_exposed,irregular\_exposed) 0.53667 0.7635

(S&G\_exposed,irregular\_sheltered) 0.33718 0.7601

(S&G\_exposed,irregular\_exposed) 0.19846 0.9129

(irregular\_sheltered,irregular\_exposed) 0.32214 0.7982

*MEANS AND STANDARD ERRORS*

Group Size Average SE

CG\_exposed 28 8.4784 1.1017

BR\_sheltered 11 15.528 3.7682

RF\_sheltered 2 3.9572 0

RF\_exposed 22 12.055 1.8587

S&G\_exposed 16 9.5639 1.5345

irregular\_sheltered 10 10.478 2.4021

irregular\_exposed 6 8.6793 1.0912