

- Group 1::** 6 instances of various sizes, randomly generated with the same generator, without any specific correlation. ZTL100, ZTL250, ZTL500 and ZTL750 are 4 instances picked from the collection maintained by Zitzler and Laumanns¹. ZTL28 and ZTL105 are 2 additional instances derived respectively from ZTL100 and ZTL250, where $\omega_i \approx 0.5 \sum_{j=1}^n w_{ij}$, $i = 1, \dots, m$. ZTL150_f250, ZTL200_f250 are 2 additional instances derived from ZTL250, where $\omega_i \approx 0.5 \sum_{j=1}^n w_{ij}$, $i = 1, \dots, m$. ZTL150_f500, ZTL200_f500 are 2 additional instances derived from ZTL500, where $\omega_i \approx 0.5 \sum_{j=1}^n w_{ij}$, $i = 1, \dots, m$. The number following ZTL in the name gives the number of variables.
- Group 2::** 15 correlated instances with 28 variables, introduced by Olga Perederieiva [?]. A1, A2, A3, A4, D1, D2, D3, D4, kp28W-ZTL, kp28, kp28-2, kp28W, kp28W-Perm, kp28c1W-c2ZTL and kp28cW-WZTL are extension of *2DKP* instances available on the OR-library² where a second objective has been added with respect to several definitions of correlation to obtain a *2O2DKP* (see Olga Perederieiva [?] for further details).
- Group 3::** 7 additional correlated instances with 105 variables, obtained following the rules described for the Group 2. W7BI-rnd1-1800, W7BI-rnd1-3000, W7BI-tube1-1800, W7BI-tube1-3000, W7BI-tube1-asyn, W7BI-tube2-1800, Wcollage-tube are summarized in Table ??.

TABLE 1. Information about instances. Column (a) gives the name of the original single-objective *2DKP*. Column (b) indicates the manner for generating the second objective: negatively correlated with the first one or, done according to the method reported in Osorio 2005 [?]. Column (c) reports the ratio $\omega_1 / \sum_{j=1}^n w_{1j}$ for the first dimension (the first constraint). The column (d) is similar to the column (c), for the second dimension.

instance	(a)	(b)	(c)	(d)
W7BI-rnd1-1800	Weing7	Osorio's method	0.48	0.50
W7BI-rnd1-3000	Weing7	Osorio's method	0.80	0.84
W7BI-tube1-1800	Weing7	anti-correlated	0.50	0.50
W7BI-tube1-3000	Weing7	anti-correlated	0.80	0.84
W7BI-tube1-asyn	Weing7	anti-correlated	0.80	0.20
W7BI-tube2-1800	Weing7	anti-correlated	0.48	0.50
Wcollage-tube	Weing1	anti-correlated	0.50	0.50

¹<http://www.tik.ee.ethz.ch/sop/download/supplementary/testProblemSuite/>

²<http://people.brunel.ac.uk/~mastjjb/jeb/orlib/mknapiinfo.html>