Dvanáct náhodně vybraných studentů univerzity, šest pregraduálních a šest postgraduálních, stanovovalo ρ
1. odpadní voda
2. zněčištěná říční voda
3. čistá říční voda.
Každý student determinoval počet bakterií vždy pouze jednoho typu vody, a to ve třech opakováních.

Water type	Student	postgraduates			undergraduates		
Sewage	1	2700	2800	1700	4900	3600	1300
	2	2600	3000	3200	3500	4100	2500
Polluted river	1	52	49	61	60	140	75
	2	68	75	83	40	60	80
Clean river	1	5.9	7.6	16	6.4	4.2	4.1
	2	5.6	5.9	6.3	8.3	3.1	5.2

Factors:
water type	fixed
PG-UG	fixed
student	random

Water type and PG-UG are crossed and fixed effects, students are hierarchically nested within them.

Linear model:
$$x_{ijkl} = \mu + \alpha_i + \beta_j + \alpha\beta_{ij} + \gamma(\alpha\beta)_{k(ij)} + \varepsilon_{ijkl}$$

Data format:

water type	study	student	bacteria
Sewage	Ph.D.	1	2700
Sewage	Ph.D.	1	2800
Sewage	Ph.D.	1	1700
Sewage	Mgr.	1	4900
Sewage	Mgr.	1	3600
Sewage	Mgr.	1	1300
Sewage	Ph.D.	2	2600
Sewage	Ph.D.	2	3000
Sewage	Ph.D.	2	3200
Sewage	Mgr.	2	3500
Sewage	Mgr.	2	4100
Sewage	Mgr.	2	2500
Polluted river	Ph.D.	1	52
Polluted river	Ph.D.	1	49
Polluted river	Ph.D.	1	61
Polluted river	Mgr.	1	60
Polluted river	Mgr.	1	140
Polluted river	Mgr.	1	75
Polluted river	Ph.D.	2	68
Polluted river	Ph.D.	2	75
Polluted river	Ph.D.	2	83
Polluted river	Mgr.	2	40
Polluted river	Mgr.	2	60
Polluted river	Mgr.	2	80
Clean river	Ph.D.	1	5.9

Clean river	Ph.D.	1	7.6
Clean river	Ph.D.	1	16
Clean river	Mgr.	1	6.4
Clean river	Mgr.	1	4.2
Clean river	Mgr.	1	4.1
Clean river	Ph.D.	2	5.6
Clean river	Ph.D.	2	5.9
Clean river	Ph.D.	2	6.3
Clean river	Mgr.	2	8.3
Clean river	Mgr.	2	3.1
Clean river	Mgr.	2	5.2

počet heterotrofních bakterií v 1 ml tří typů vody:

water type	study	student	bacteria	ln bacteria
Sewage	Ph.D.	1	2700	7.901007
Sewage	Ph.D.	1	2800	7.937375
Sewage	Ph.D.	1	1700	7.438384
Sewage	Ph.D.	2	2600	7.863267
Sewage	Ph.D.	2	3000	8.006368
Sewage	Ph.D.	2	3200	8.070906
Polluted river	Ph.D.	1	52	3.951244
Polluted river	Ph.D.	1	49	3.89182
Polluted river	Ph.D.	1	61	4.110874
Polluted river	Ph.D.	2	68	4.219508
Polluted river	Ph.D.	2	75	4.317488
Polluted river	Ph.D.	2	83	4.418841
Clean river	Ph.D.	1	5.9	1.774952
Clean river	Ph.D.	1	7.6	2.028148
Clean river	Ph.D.	1	16	2.772589
Clean river	Ph.D.	2	5.6	1.722767
Clean river	Ph.D.	2	5.9	1.774952
Clean river	Ph.D.	2	6.3	1.84055