

Appendix A - Passenger demand model analysis

Table A.1 - Log-linear regression (twenty busiest Brazilian routes in year 2014)

From	To	P	C	B	G	dij	f_{ij} ACTUAL DEMAND	$\ln(f_{ij})$ ACTUAL DEMAND	$\ln P$	$\ln C$	$\ln B$	$\ln G$	$\ln D$	$\ln(f_{ij})$ MODEL DEMAND	Error %
SDU	CGH	7.8234E+13	1.5791E+06	7.0360E+01	1.8833E+17	365	4000926	3.1991E+01	1.4272E+01	4.2536E+00	3.9777E+01	5.9006E+00	1.5202E+01	1.4495E+01	-4.65%
CGH	BSB	3.5840E+13	3.9478E+07	7.4330E+01	1.2400E+17	873	2157627	3.1210E+01	1.7491E+01	4.3085E+00	3.9359E+01	6.7717E+00	1.4585E+01	1.4403E+01	-1.25%
SSA	GRU	3.5369E+13	9.8696E+08	6.1620E+01	3.5564E+16	1450	2435786	3.1197E+01	2.0710E+01	4.1210E+00	3.8110E+01	7.2793E+00	1.4706E+01	1.4425E+01	-1.91%
POA	GRU	1.7829E+13	9.8696E+08	7.7990E+01	4.0190E+16	866	2020492	3.0512E+01	2.0710E+01	4.3566E+00	3.8232E+01	6.7633E+00	1.4519E+01	1.4190E+01	-2.26%
GRU	REC	1.9569E+13	9.8696E+08	7.3060E+01	3.1836E+16	2099	2031138	3.0605E+01	2.0710E+01	4.2913E+00	3.7999E+01	7.6492E+00	1.4524E+01	1.4420E+01	-0.72%
CGH	CNF	3.0382E+13	1.5791E+08	6.7530E+01	5.5054E+16	523	1516520	3.1045E+01	1.8878E+01	4.2126E+00	3.8547E+01	6.2601E+00	1.4232E+01	1.4206E+01	-0.18%
CGH	POA	1.7829E+13	3.9478E+07	7.7990E+01	4.0190E+16	837	1540414	3.0512E+01	1.7491E+01	4.3566E+00	3.8232E+01	6.7300E+00	1.4248E+01	1.4301E+01	0.38%
FOR	GRU	3.1416E+13	9.8696E+08	7.2680E+01	3.5629E+16	2345	1757898	3.1078E+01	2.0710E+01	4.2861E+00	3.8112E+01	7.7598E+00	1.4380E+01	1.4583E+01	1.41%
CGH	CWB	2.2800E+13	3.9478E+07	8.0420E+01	4.9549E+16	331	1354648	3.0758E+01	1.7491E+01	4.3873E+00	3.8442E+01	5.8019E+00	1.4119E+01	1.4153E+01	0.24%
CWB	GRU	2.2800E+13	9.8696E+08	8.0420E+01	4.9549E+16	359	1460682	3.0758E+01	2.0710E+01	4.3873E+00	3.8442E+01	5.8844E+00	1.4194E+01	1.4054E+01	-0.99%
SDU	GRU	7.8234E+13	3.9478E+07	7.0360E+01	1.8833E+17	343	1405809	3.1991E+01	1.7491E+01	4.2536E+00	3.9777E+01	5.8368E+00	1.4156E+01	1.4360E+01	1.44%
BSB	GRU	3.5840E+13	9.8696E+08	7.4330E+01	1.2400E+17	855	1384058	3.1210E+01	2.0710E+01	4.3085E+00	3.9359E+01	6.7508E+00	1.4141E+01	1.4279E+01	0.98%
SSA	GIG	1.9094E+13	9.8696E+08	5.8620E+01	1.6979E+16	1216	1388974	3.0580E+01	2.0710E+01	4.0711E+00	3.7371E+01	7.1034E+00	1.4144E+01	1.4233E+01	0.63%
BSB	SDU	1.9348E+13	3.9478E+07	7.1330E+01	5.9200E+16	929	1442434	3.0594E+01	1.7491E+01	4.2673E+00	3.8620E+01	6.8336E+00	1.4182E+01	1.4272E+01	0.63%
CNF	GRU	3.0382E+13	3.9478E+09	6.7530E+01	5.5054E+16	495	1408349	3.1045E+01	2.2096E+01	4.2126E+00	3.8547E+01	6.2043E+00	1.4158E+01	1.4074E+01	-0.59%
FLN	GRU	5.7518E+12	9.8696E+08	7.1260E+01	1.0883E+16	515	987249	2.9381E+01	2.0710E+01	4.2663E+00	3.6926E+01	6.2441E+00	1.3803E+01	1.3787E+01	-0.11%
SDU	POA	9.6249E+12	3.9478E+07	7.4990E+01	1.9188E+16	1119	1047310	2.9895E+01	1.7491E+01	4.3174E+00	3.7493E+01	7.0204E+00	1.3862E+01	1.4225E+01	2.62%
CNF	BSB	7.5139E+12	3.9478E+09	6.8500E+01	1.7306E+16	592	1114712	2.9648E+01	2.2096E+01	4.2268E+00	3.7390E+01	6.3842E+00	1.3924E+01	1.3791E+01	-0.96%
SDU	CNF	1.6402E+13	1.5791E+08	6.4530E+01	2.6284E+16	374	1035508	3.0428E+01	1.8878E+01	4.1671E+00	3.7808E+01	5.9230E+00	1.3850E+01	1.3978E+01	0.92%
CGH	GIG	7.8234E+13	3.9478E+07	7.0360E+01	1.8833E+17	360	866879	3.1991E+01	1.7491E+01	4.2536E+00	3.9777E+01	5.8862E+00	1.3673E+01	1.4372E+01	5.12%

Coefficient	STD error	Statt	P value	low 95%	Upper 95%
Intercept	5.1453	6.6679	0.7716	0.4532	-9.1560 19.4466
K1	0.3153	0.3328	0.9477	0.3594	-0.3983 10.290
K2	-0.0370	0.0456	-0.8107	0.4311	-0.1348 0.0608
K3	0.4901	1.2045	0.4069	0.6902	-2.0933 3.0736
K4	-0.0931	0.3026	-0.3075	0.7630	-0.7422 0.5561
K5	0.2382	0.1428	16.684	0.1174	-0.0680 0.5444

Regression	
Multiple R	0.5992
R Squared	0.3591
Adjusted R Squared	0.1302
STD error	0.3313
Observations	20

Table A.2 - Log-linear regression (twenty busiest Brazilian routes in year 2015)

From	To	P	C	B	G	dij	<i>f_{ij}</i> ACTUAL DEMAND	<i>ln(f_{ij})</i> ACTUAL DEMAND	lnP	lnC	lnB	lnG	lnD	<i>ln(f_{ij})</i> MODEL DEMAND	Error %
SDU	CGH	7.8234E+13	1.5791E+06	7.0360E+01	1.8833E+17	365	4047159	3.1991E+01	1.4272E+01	4.2536E+00	3.9777E+01	5.9006E+00	1.5214E+01	1.4563E+01	-4.28%
CGH	BSB	3.5840E+13	3.9478E+07	7.4330E+01	1.2400E+17	873	2225368	3.1210E+01	1.7491E+01	4.3085E+00	3.9359E+01	6.7717E+00	1.4615E+01	1.4333E+01	-1.93%
SSA	GRU	3.5369E+13	9.8696E+08	6.1620E+01	3.5564E+16	1450	2203929	3.1197E+01	2.0710E+01	4.1210E+00	3.8110E+01	7.2793E+00	1.4606E+01	1.4278E+01	-2.24%
POA	CGH	1.7829E+13	3.9478E+07	7.7990E+01	4.0190E+16	837	2018492	3.0512E+01	1.7491E+01	4.3566E+00	3.8232E+01	6.7300E+00	1.4518E+01	1.4247E+01	-1.86%
GRU	REC	1.9569E+13	9.8696E+08	7.3060E+01	3.1836E+16	2099	1975741	3.0605E+01	2.0710E+01	4.2913E+00	3.7999E+01	7.6492E+00	1.4496E+01	1.4245E+01	-1.74%
CGH	CNF	3.0382E+13	1.5791E+08	6.7530E+01	5.5054E+16	523	1822059	3.1045E+01	1.8878E+01	4.2126E+00	3.8547E+01	6.2601E+00	1.4415E+01	1.4186E+01	-1.59%
CGH	POA	1.7829E+13	3.9478E+07	7.7990E+01	4.0190E+16	837	1696188	3.0512E+01	1.7491E+01	4.3566E+00	3.8232E+01	6.7300E+00	1.4344E+01	1.4247E+01	-0.67%
CWB	GRU	2.2800E+13	9.8696E+08	8.0420E+01	4.9549E+16	359	1392023	3.0758E+01	2.0710E+01	4.3873E+00	3.8442E+01	5.8844E+00	1.4146E+01	1.4121E+01	-0.18%
FOR	CGH	3.1416E+13	3.9478E+07	7.2680E+01	3.5629E+16	2372	1678284	3.1078E+01	1.7491E+01	4.2861E+00	3.8112E+01	7.7714E+00	1.4333E+01	1.4552E+01	1.53%
CGH	CWB	2.2800E+13	3.9478E+07	8.0420E+01	4.9549E+16	331	1520855	3.0758E+01	1.7491E+01	4.3873E+00	3.8442E+01	5.8019E+00	1.4235E+01	1.4235E+01	0.00%
SDU	GRU	7.8234E+13	3.9478E+07	7.0360E+01	1.8833E+17	343	1390138	3.1991E+01	1.7491E+01	4.2536E+00	3.9777E+01	5.8368E+00	1.4145E+01	1.4432E+01	2.03%
CNF	GRU	3.0382E+13	3.9478E+09	6.7530E+01	5.5054E+16	495	1243330	3.1045E+01	2.2096E+01	4.2126E+00	3.8547E+01	6.2043E+00	1.4033E+01	1.4056E+01	0.16%
SSA	GIG	1.9094E+13	9.8696E+08	5.8620E+01	1.6979E+16	1216	1344205	3.0580E+01	2.0710E+01	4.0711E+00	3.7371E+01	7.1034E+00	1.4111E+01	1.4071E+01	-0.28%
BSB	SDU	1.9348E+13	3.9478E+07	7.1330E+01	5.9200E+16	929	1338162	3.0594E+01	1.7491E+01	4.2673E+00	3.8620E+01	6.8336E+00	1.4107E+01	1.4161E+01	0.39%
BSB	CGH	3.5840E+13	3.9478E+07	7.4330E+01	1.2400E+17	873	1352031	3.1210E+01	1.7491E+01	4.3085E+00	3.9359E+01	6.7717E+00	1.4117E+01	1.4333E+01	1.53%
FLN	GRU	5.7518E+12	9.8696E+08	7.1260E+01	1.0883E+16	515	1064819	2.9381E+01	2.0710E+01	4.2663E+00	3.6926E+01	6.2441E+00	1.3878E+01	1.3720E+01	-1.14%
CGH	GIG	7.8234E+13	3.9478E+07	7.0360E+01	1.8833E+17	360	939168	3.1991E+01	1.7491E+01	4.2536E+00	3.9777E+01	5.8862E+00	1.3753E+01	1.4438E+01	4.98%
GIG	POA	9.6249E+12	9.8696E+08	7.4990E+01	1.9188E+16	1122	1032211	2.9895E+01	2.0710E+01	4.3174E+00	3.7493E+01	7.0227E+00	1.3847E+01	1.3981E+01	0.96%
SDU	REC	1.0564E+13	3.9478E+07	7.0060E+01	1.5199E+16	1863	852699	2.9989E+01	1.7491E+01	4.2494E+00	3.7260E+01	7.5301E+00	1.3656E+01	1.4175E+01	3.80%
SDU	CNF	1.6402E+13	1.5791E+08	6.4530E+01	2.6284E+16	374	953547	3.0428E+01	1.8878E+01	4.1671E+00	3.7808E+01	5.9230E+00	1.3768E+01	1.3964E+01	1.43%

Coefficient	STD error	Statt	P value	low 95%	Upper 95%
Intercept	3.5299	8.6330	0.4089	0.6888	-14.9860
K1	0.4011	0.3960	10.129	0.3283	-0.4482
K2	-0.0383	0.0545	-0.7031	0.4935	-0.1551
K3	0.8548	1.3914	0.6143	0.5489	-2.1296
K4	-0.1401	0.3480	-0.4027	0.6933	-0.8866
K5	0.1163	0.1504	0.7730	0.4524	-0.2063
					0.4389

Regression	
Multiple R	0.5510
R Squared	0.3035
Adjusted R Squared	0.0548
STD error	0.3597
Observations	20

Table A.3 - Log-linear regression (twenty busiest Brazilian routes in year 2016)

From	To	P	C	B	G	dij	f_{ij} ACTUAL DEMAND	$\ln(f_{ij})$ ACTUAL DEMAND	$\ln P$	$\ln C$	$\ln B$	$\ln G$	$\ln D$	$\ln(f_{ij})$ MODEL DEMAND	Error %
SDU	CGH	7.8234E+13	1.5791E+06	7.0360E+01	1.8833E+17	365	3906171	1.5178E+01	3.1991E+01	1.4272E+01	4.2536E+00	3.9777E+01	5.9006E+00	1.4518E+01	-4.35%
CGH	BSB	3.5840E+13	3.9478E+07	7.4330E+01	1.2400E+17	873	2078804	1.4547E+01	3.1210E+01	1.7491E+01	4.3085E+00	3.9359E+01	6.7717E+00	1.4199E+01	-2.40%
SSA	GRU	3.5369E+13	9.8696E+08	6.1620E+01	3.5564E+16	1450	1856072	1.4434E+01	3.1197E+01	2.0710E+01	4.1210E+00	3.8110E+01	7.2793E+00	1.4136E+01	-2.07%
POA	CGH	1.7829E+13	3.9478E+07	7.7990E+01	4.0190E+16	837	1811195	1.4409E+01	3.0512E+01	1.7491E+01	4.3566E+00	3.8232E+01	6.7300E+00	1.4188E+01	-1.53%
GRU	REC	1.9569E+13	9.8696E+08	7.3060E+01	3.1836E+16	2099	1752261	1.4376E+01	3.0605E+01	2.0710E+01	4.2913E+00	3.7999E+01	7.6492E+00	1.4113E+01	-1.83%
CGH	CNF	3.0382E+13	1.5791E+08	6.7530E+01	5.5054E+16	523	1737740	1.4368E+01	3.1045E+01	1.8878E+01	4.2126E+00	3.8547E+01	6.2601E+00	1.4103E+01	-1.84%
CGH	POA	1.7829E+13	3.9478E+07	7.7990E+01	4.0190E+16	837	1726640	1.4362E+01	3.0512E+01	1.7491E+01	4.3566E+00	3.8232E+01	6.7300E+00	1.4188E+01	-1.21%
CWB	GRU	2.2800E+13	9.8696E+08	8.0420E+01	4.9549E+16	359	1490442	1.4215E+01	3.0758E+01	2.0710E+01	4.3873E+00	3.8442E+01	5.8844E+00	1.4138E+01	-0.54%
FOR	CGH	3.1416E+13	3.9478E+07	7.2680E+01	3.5629E+16	2372	1479841	1.4207E+01	3.1078E+01	1.7491E+01	4.2861E+00	3.8112E+01	7.7714E+00	1.4465E+01	1.81%
CGH	CWB	2.2800E+13	3.9478E+07	8.0420E+01	4.9549E+16	331	1447058	1.4185E+01	3.0758E+01	1.7491E+01	4.3873E+00	3.8442E+01	5.8019E+00	1.4267E+01	0.58%
SDU	GRU	7.8234E+13	3.9478E+07	7.0360E+01	1.8833E+17	343	1308077	1.4084E+01	3.1991E+01	1.7491E+01	4.2536E+00	3.9777E+01	5.8368E+00	1.4383E+01	2.12%
CNF	GRU	3.0382E+13	3.9478E+09	6.7530E+01	5.5054E+16	495	1164835	1.3968E+01	3.1045E+01	2.2096E+01	4.2126E+00	3.8547E+01	6.2043E+00	1.3968E+01	0.00%
SSA	GIG	1.9094E+13	9.8696E+08	5.8620E+01	1.6979E+16	1216	1140958	1.3947E+01	3.0580E+01	2.0710E+01	4.0711E+00	3.7371E+01	7.1034E+00	1.3921E+01	-0.19%
BSB	SDU	1.9348E+13	3.9478E+07	7.1330E+01	5.9200E+16	929	1117575	1.3927E+01	3.0594E+01	1.7491E+01	4.2673E+00	3.8620E+01	6.8336E+00	1.4007E+01	0.58%
BSB	CGH	3.5840E+13	3.9478E+07	7.4330E+01	1.2400E+17	873	1064470	1.3878E+01	3.1210E+01	1.7491E+01	4.3085E+00	3.9359E+01	6.7717E+00	1.4199E+01	2.31%
FLN	GRU	5.7518E+12	9.8696E+08	7.1260E+01	1.0883E+16	515	1013807	1.3829E+01	2.9381E+01	2.0710E+01	4.2663E+00	3.6926E+01	6.2441E+00	1.3643E+01	-1.35%
CGH	GIG	7.8234E+13	3.9478E+07	7.0360E+01	1.8833E+17	360	951193	1.3765E+01	3.1991E+01	1.7491E+01	4.2536E+00	3.9777E+01	5.8862E+00	1.4385E+01	4.50%
GIG	POA	9.6249E+12	9.8696E+08	7.4990E+01	1.9188E+16	1122	874735	1.3682E+01	2.9895E+01	2.0710E+01	4.3174E+00	3.7493E+01	7.0227E+00	1.3878E+01	1.43%
SDU	REC	1.0564E+13	3.9478E+07	7.0060E+01	1.5199E+16	1863	834933	1.3635E+01	2.9989E+01	1.7491E+01	4.2494E+00	3.7260E+01	7.5301E+00	1.4044E+01	3.00%
SDU	CNF	1.6402E+13	1.5791E+08	6.4530E+01	2.6284E+16	374	833881	1.3634E+01	3.0428E+01	1.8878E+01	4.1671E+00	3.7808E+01	5.9230E+00	1.3888E+01	1.86%

Coefficient	STD error	Statt	P value	low 95%	Upper 95%
Intercept	2.0559	8.6805	0.2368	0.8162	-16.5619
K1	0.5305	0.3982	1.3324	0.2040	-0.3235
K2	-0.0412	0.0548	-0.7513	0.4649	-0.1586
K3	14448	1.3991	10327	0.3193	-15560
K4	-0.2598	0.3499	-0.7423	0.4702	-10.103
K5	0.0449	0.1513	0.2972	0.7707	-0.2795
				0.3693	

Regression	
Multiple R	0.5698
R Squared	0.3247
Adjusted R Squared	0.0835
STD error	0.3617
Observations	20

APPENDIX B – Network data

Table B.1: Airport data

Airport Code (IATA)	Airport Location/Name	Reference Latitude [deg]	Reference Longitude [deg]	Reference Elevation [ft]	Magnetic Variation [deg]	Average Departure Delay [min]	Average Arrival Delay [min]
AJU	Aracaju/Santa Maria	-10.9840	-37.0703	23	-23	2	2
BEL	Belém/Val de Caes Intl	-1.3793	-48.4763	54	-19	3	3
BSB	Brasília/Jucelino Kubitscheck Intl	-15.8635	-47.9276	3497	-20	10	5
CGH	Sao Paulo/Congonhas	-23.6267	-46.6554	2631	-20	3	3
CNF	Belo Horizonte/Confins Intl	-19.6338	-43.9689	2715	-21	3	3
CWB	Curitiba/Afonso Pena Intl	-25.5285	-49.1758	2988	-18	5	5
FLN	Florianópolis/Hercílio Luz Intl	-27.6705	-48.5472	20	-17	2	2
FOR	Fortaleza/Pinto Martins	-3.7763	-38.5326	82	-21	2	2
GIG	Rio de Janeiro/Tom Jobim (Galeão) Intl	-22.8089	-43.2436	28	-21	10	5
GRU	São Paulo/André Franco Montoro (Guarulhos) Intl	-23.4321	-46.4695	2459	-20	10	5
GYN	Goiânia/Santa Genoveva	-16.6320	-49.2207	2450	-19	2	2
MAO	Eduardo Gomes/Manaus Intl	-3.0386	-60.0497	264	-14	2	2
MCZ	Maceió/Zumbi dos Palmares	-9.5108	-35.7917	387	-22	2	2
NAT	Natal/São Gonçalo do Amarante Intl	-5.9114	-35.2477	169	-22	2	2
POA	Porto Alegre/Salgado Filho Intl	-29.9944	-51.1714	11	-15	3	3
REC	Recife/Guararapes Intl	-8.1268	-34.9230	33	-23	2	2
SDU	Rio de Janeiro/Santos Dumont	-22.9105	-43.1631	11	-21	3	3
SLI	São Luiz/Marechal Cunha Machado Intl	-2.5854	-44.2341	178	-20	2	2
SSA	Salvador/Antônio Carlos Magalhães Intl	-12.9110	-38.3310	64	-23	2	2
VIX	Vitória/Goiabeiras	-20.2581	-40.2864	11	-23	2	2

Table B.2:Econometric data

Airport Location/Name	Population (2016)	Catchment Radius [km]	Buying Power Index (2016)	GDP 2016 [x10E6 BRL]
Aracaju/Santa Maria	641523	100	36.00	14893787
Belém/Val de Caes Intl	1446042	200	20.00	28706165
Brasília/Jucelino Kubitscheck Intl	2977216	100	37.65	197432059
Sao Paulo/Congonhas	12038175	20	36.68	628064882
Belo Horizonte/Confins Intl	2523794	200	30.85	87656760
Curitiba/Afonso Pena Intl	1893997	100	43.74	78892229
Florianópolis/Hercílio Luz Intl	477798	100	34.58	17328527
Fortaleza/Pinto Martins	2609716	100	36.00	56728828
Rio de Janeiro/Tom Jobim (Galeão) Intl	6498837	100	33.68	299849795
São Paulo/André Franco Montoro (Guarulhos) Intl	12038175	100	36.68	628064882
Goiânia/Santa Genoveva	1021709	100	37.00	46094735
Eduardo Gomes/Manaus Intl	2094391	200	20.00	67572523
Maceió/Zumbi dos Palmares	1021709	100	36.00	18302279
Natal/São Gonçalo do Amarante Intl	877662	100	36.00	19076030
Porto Alegre/Salgado Filho Intl	1481019	100	41.31	63990644
Recife/Guararapes Intl	1625583	100	36.38	50688395
Rio de Janeiro/Santos Dumont	6498837	20	33.68	299849795
São Luiz/Marechal Cunha Machado Intl	1091868	100	25	26326087
Salvador/Antônio Carlos Magalhães Intl	2938092	100	24.94	56624041
Vitória/Goiabeiras	363140	100	30	23370919

Table B.3: Network route distances -Dij [nm]

Dep Apt (i)	Arrival Airport (j)																			
	AJU	BEL	BSB	CGH	CNF	CWB	FLN	FOR	GIG	GRU	GYN	MAO	MCZ	NAT	POA	REC	SDU	SLI	SSA	VIX
AJU	0	918	719	964	675	1145	1228	455	817	948	809	1492	120	333	1428	220	821	680	142	605
BEL	918	0	896	1380	1161	1494	1626	632	1362	1369	944	723	928	863	1777	933	1369	273	946	1268
BSB	719	896	0	486	330	602	731	941	509	476	90	1083	831	985	893	920	517	851	603	525
CGH	964	1380	486	0	291	184	271	1320	200	16	457	1504	1084	1289	466	1184	203	1309	823	421
CNF	675	1161	330	291	0	470	560	1034	201	275	360	1413	794	998	757	895	208	1054	534	218
CWB	1145	1494	602	184	470	0	137	1486	375	200	550	1534	1264	1467	297	1365	376	1449	1004	602
FLN	1228	1626	731	271	560	137	0	1591	422	287	684	1668	1347	1556	202	1447	421	1572	1087	654
FOR	455	632	941	1320	1034	1486	1591	0	1210	1305	1026	1329	393	242	1782	349	1215	360	565	1025
GIG	817	1362	509	200	201	375	422	1210	0	188	517	1584	933	1149	624	1034	8	1252	677	232
GRU	948	1369	476	16	275	200	287	1305	188	0	450	1500	1068	1273	482	1168	191	1296	807	406
GYN	809	944	90	457	360	550	684	1026	517	450	0	1068	920	1075	834	1010	524	920	690	570
MAO	1492	723	1083	1504	1413	1534	1668	1329	1584	1500	1068	0	1543	1539	1746	1578	1592	977	1462	1598
MCZ	120	928	831	1084	794	1264	1347	393	933	1068	920	1543	0	225	1547	101	937	673	261	717
NAT	333	863	985	1289	998	1467	1556	242	1149	1273	1075	1539	225	0	1754	138	1152	591	472	937
POA	1428	1777	893	466	757	297	202	1782	624	482	834	1746	1547	1754	0	1648	623	1743	1285	856
REC	220	933	920	1184	895	1365	1447	349	1034	1168	1010	1578	101	138	1648	0	1037	668	361	816
SDU	821	1369	517	203	208	376	421	1215	8	191	524	1592	937	1152	623	1037	0	1259	680	233
SLI	680	273	851	1309	1054	1449	1572	360	1252	1296	920	977	673	591	1743	668	1259	0	734	1119
SSA	142	946	603	823	534	1004	1087	565	677	807	690	1462	261	472	1285	361	680	734	0	469
VIX	605	1268	525	421	218	602	654	1025	232	406	570	1598	717	937	856	816	233	1119	469	0

Table B.4: Magnetic headings - Ψ_{ij} [°]

Dep Apt (i)	Arrival Airport (j)																			
	AJU	BEL	BSB	CGH	CNF	CWB	FLN	FOR	GIG	GRU	GYN	MAO	MCZ	NAT	POA	REC	SDU	SLI	SSA	VIX
AJU	0.0	330.5	265.5	236.1	238.7	237.1	231.2	10.5	227.7	236.0	264.1	306.0	63.1	42.2	231.5	59.7	227.2	340.7	235.5	221.1
BEL	151.8	0.0	197.4	195.1	186.7	200.0	198.1	123.8	187.0	194.6	201.7	278.1	143.8	129.8	201.9	138.0	186.9	125.4	160.4	178.6
BSB	88.0	17.3	0.0	191.4	156.1	205.7	201.2	58.9	168.8	190.0	257.6	84.2	73.7	208.8	81.7	168.7	35.7	95.1	143.8	
CGH	59.0	14.7	11.0	0.0	53.0	248.8	221.0	43.3	96.6	61.2	0.0	342.8	59.1	54.6	228.8	59.4	98.6	26.7	59.3	83.0
CNF	60.5	5.9	334.9	232.0	0.0	237.7	225.7	40.2	189.1	231.5	320.2	332.1	60.6	54.4	228.8	60.5	188.2	19.6	61.7	122.8
CWB	60.9	20.2	26.1	69.8	59.7	0.0	182.9	46.4	84.1	69.2	18.2	349.3	60.8	56.5	217.6	60.9	85.2	31.5	61.5	79.5
FLN	55.1	18.2	21.4	41.8	47.5	2.7	0.0	42.6	64.8	42.8	14.6	349.5	55.4	52.1	240.1	55.9	65.8	28.6	54.9	67.3
FOR	190.7	303.3	237.3	221.3	219.1	223.7	219.8	0.0	214.1	221.1	238.5	288.8	176.2	144.7	221.2	162.6	213.8	302.1	200.8	207.8
GIG	49.5	5.9	347.2	275.2	8.8	261.6	242.5	35.2	0.0	278.0	336.6	335.6	50.9	47.2	241.0	51.9	164.9	17.6	48.1	69.7
GRU	58.8	14.2	9.5	241.2	52.5	248.0	221.9	43.0	99.3	0.0	358.2	342.2	59.0	54.4	229.1	59.2	101.4	26.3	59.2	83.7
GYN	87.0	21.8	77.9	180.9	141.8	198.2	194.9	60.4	158.6	179.1	0.0	337.3	83.6	74.0	204.3	81.4	158.7	39.3	93.0	135.5
MAO	128.9	98.6	154.8	166.0	155.3	172.1	172.6	110.1	159.4	165.4	159.2	0.0	124.1	115.5	178.1	121.1	159.5	105.8	134.4	151.8
MCZ	242.9	322.5	261.5	236.0	238.6	236.7	231.3	355.9	228.8	236.0	260.5	301.5	0.0	30.6	231.4	54.4	228.4	330.0	238.5	224.0
NAT	221.9	308.9	251.3	231.6	232.4	232.7	228.1	324.5	225.2	231.5	251.3	293.5	210.5	0.0	228.5	194.2	224.9	311.0	225.8	220.9
POA	56.6	22.6	30.1	50.9	51.8	38.5	61.3	44.9	64.5	51.2	25.0	355.5	56.7	53.6	0.0	57.1	65.2	32.3	56.6	66.8
REC	239.4	316.9	259.0	236.1	238.4	236.7	231.7	342.3	229.6	236.1	258.3	298.6	234.2	14.2	231.7	0.0	229.2	321.9	237.7	225.6
SDU	49.0	5.8	347.1	277.2	7.9	262.8	243.5	34.9	344.8	280.1	336.7	335.6	50.5	46.9	241.6	51.5	0.0	17.4	47.5	67.8
SLI	161.6	305.3	215.1	206.2	199.6	210.3	207.4	122.5	197.9	205.7	218.4	285.0	150.9	131.7	210.3	142.7	197.7	0.0	172.3	189.5
SSA	55.8	339.1	272.7	236.7	240.1	237.9	231.3	20.7	226.6	236.6	270.2	311.3	59.0	46.3	231.8	58.3	226.0	351.5	0.0	217.0
VIX	41.9	357.0	321.4	260.6	301.6	256.1	243.9	28.1	248.6	261.4	312.7	327.7	45.1	42.0	242.1	46.9	246.7	8.7	37.6	0.0

Appendix C – Optimization results

Fixed network/Optimum aircraft case (5 airports)

Id#	PAR	CAT	NO PASS	NDOC	NP	wS	wAR	wTR	wSweep	wTwist	Kink	BPR	eDiam	POR	TIT	FPR	Npx	nSeat
0	F	ULH	#NAN	#NAN	#NAN	121.7	7.6	0.32	30.3	-4.5	0.39	5.3	1.50	22.6	1454	1.6	118	5
1	F	ULH	0	1.15E+01	6.99E-04	121.7	7.6	0.32	30.3	-4.5	0.39	5.3	1.50	22.6	1454	1.6	118	5
2	F	ULH	0	9.70E+00	9.92E-05	113.4	8.1	0.38	17.4	-4.1	0.33	6.2	1.55	28.4	1411	1.6	84	4
3	F	ULH	#NAN	#NAN	#NAN	83.0	8.9	0.34	21.3	-2.9	0.36	5.5	1.56	23.8	1442	1.6	124	5
4	F	ULH	1	#NAN	#NAN	77.5	9.7	0.37	25.5	-4.1	0.35	5.0	1.42	26.3	1466	1.6	119	6
5	F	ULH	1	#NAN	#NAN	77.5	9.4	0.31	15.3	-3.1	0.32	6.1	1.31	25.6	1398	1.6	106	6
6	F	ULH	0	1.01E+01	3.46E-04	116.2	8.8	0.36	23.7	-3.2	0.37	6.5	1.34	24.1	1463	1.6	95	5
7	F	ULH	0	1.16E+01	4.42E-04	127.2	8.2	0.43	24.3	-2.2	0.37	5.7	1.45	24.7	1419	1.6	111	4
8	F	ULH	0	8.48E+00	3.20E-04	85.8	8.6	0.37	16.5	-2.7	0.38	6.0	1.29	26.5	1450	1.6	81	6
9	F	ULH	0	1.06E+01	7.41E-04	99.6	8.4	0.42	22.2	-2.4	0.40	6.4	1.47	25.3	1479	1.6	114	5
10	F	ULH	1	#NAN	#NAN	121.7	8.3	0.35	27.9	-4.8	0.34	6.0	1.41	22.1	1404	1.6	127	4
11	F	ULH	1	#NAN	#NAN	102.4	9.2	0.44	32.4	-5.0	0.38	6.2	1.37	25.1	1427	1.6	124	4
12	F	ULH	0	1.03E+01	4.17E-04	96.9	9.0	0.41	18.6	-3.4	0.36	5.6	1.35	29.7	1458	1.6	100	4
13	F	ULH	0	1.05E+01	2.16E-04	116.2	9.7	0.42	25.8	-2.9	0.33	5.4	1.53	27.6	1386	1.6	94	6
14	F	ULH	1	#NAN	#NAN	88.6	9.5	0.40	31.8	-3.8	0.40	5.2	1.48	27.6	1474	1.6	99	5
15	F	ULH	#NAN	#NAN	#NAN	130.0	8.0	0.39	17.7	-3.8	0.36	5.3	1.60	26.9	1393	1.6	72	5
16	F	ULH	1	#NAN	#NAN	72.0	9.1	0.44	31.2	-4.7	0.35	5.8	1.38	23.0	1422	1.6	78	6
17	F	ULH	0	9.40E+00	-9.74E-05	107.9	9.3	0.38	20.1	-4.4	0.38	5.1	1.33	28.6	1380	1.6	73	6
18	F	ULH	0	9.85E+00	1.57E-04	105.1	8.7	0.33	20.7	-2.1	0.39	5.9	1.52	29.3	1432	1.6	86	4
19	F	ULH	1	#NAN	#NAN	80.3	7.7	0.34	29.4	-3.6	0.33	6.3	1.44	23.6	1437	1.6	107	5
20	F	ULH	0	9.66E+00	3.04E-04	94.1	7.8	0.31	27.6	-2.5	0.34	5.6	1.57	29.0	1410	1.6	91	4
21	F	MOGA2	0	1.06E+01	7.41E-04	99.6	8.4	0.42	22.2	-2.4	0.40	6.4	1.47	25.3	1479	1.6	114	5
22	F	MOGA2	#NAN	#NAN	#NAN	96.9	8.1	0.38	22.2	-4.6	0.33	6.2	1.54	28.4	1409	1.6	84	4
23	F	MOGA2	0	1.15E+01	8.58E-04	105.1	8.9	0.34	21.0	-3.0	0.36	5.7	1.56	23.8	1442	1.6	124	5
24	F	MOGA2	1	#NAN	#NAN	77.5	9.7	0.37	25.5	-4.1	0.35	5.0	1.42	26.3	1466	1.6	119	6
25	F	MOGA2	1	#NAN	#NAN	77.5	7.9	0.31	15.3	-3.1	0.39	6.1	1.31	25.6	1398	1.6	85	6
26	F	MOGA2	1	#NAN	#NAN	121.7	8.7	0.34	22.5	-3.8	0.36	6.5	1.30	23.6	1453	1.6	100	5
27	F	MOGA2	0	1.11E+01	4.78E-04	124.5	8.1	0.41	24.9	-2.2	0.37	5.8	1.52	24.1	1420	1.6	108	5
28	F	MOGA2	0	8.48E+00	3.20E-04	85.8	8.6	0.37	16.5	-2.7	0.38	6.0	1.29	26.5	1450	1.6	81	6
29	F	MOGA2	1	#NAN	#NAN	91.3	8.6	0.45	17.1	-2.0	0.39	6.5	1.48	26.3	1480	1.6	110	5
30	F	MOGA2	0	1.01E+01	1.11E-04	121.7	8.3	0.35	32.7	-4.8	0.34	6.0	1.41	22.1	1404	1.6	86	4
31	F	MOGA2	1	#NAN	#NAN	102.4	9.2	0.45	32.4	-5.0	0.38	5.2	1.37	25.1	1427	1.6	124	4
32	F	MOGA2	0	9.84E+00	3.62E-04	96.9	8.6	0.39	17.4	-3.3	0.36	5.6	1.37	28.5	1456	1.6	95	4
33	F	MOGA2	0	9.97E+00	4.69E-04	105.1	9.2	0.41	20.4	-3.8	0.36	5.5	1.36	29.0	1444	1.6	99	5
34	F	MOGA2	0	9.85E+00	5.40E-04	88.6	9.5	0.40	31.8	-3.8	0.40	5.2	1.35	27.6	1474	1.6	99	5
35	F	MOGA2	#NAN	#NAN	#NAN	130.0	8.7	0.39	17.7	-3.8	0.35	5.1	1.60	26.9	1393	1.6	71	5
36	F	MOGA2	#NAN	#NAN	#NAN	72.0	9.1	0.44	31.2	-4.2	0.32	5.8	1.38	23.0	1422	1.6	76	6
37	F	MOGA2	0	9.29E+00	-7.19E-05	107.9	9.3	0.38	20.1	-4.4	0.33	5.1	1.33	28.6	1380	1.6	73	6
38	F	MOGA2	0	1.04E+01	6.98E-04	105.1	8.4	0.42	22.2	-2.4	0.40	6.4	1.47	27.9	1432	1.6	110	5
39	F	MOGA2	1	#NAN	#NAN	80.3	7.7	0.34	29.4	-3.6	0.33	6.3	1.44	23.6	1437	1.6	107	4
40	F	MOGA2	0	9.32E+00	2.95E-04	94.1	7.6	0.32	28.5	-2.8	0.32	5.6	1.49	28.8	1423	1.6	85	4
41	F	MOGA2	0	1.07E+01	7.24E-04	99.6	8.4	0.44	22.2	-2.4	0.40	6.4	1.47	22.4	1479	1.6	114	5
42	F	MOGA2	0	9.13E+00	2.74E-04	96.9	8.1	0.40	22.2	-4.6	0.32	6.2	1.49	28.4	1405	1.6	84	4
43	F	MOGA2	0	1.04E+01	7.06E-04	105.1	8.4	0.34	21.0	-3.0	0.40	6.4	1.47	27.9	1432	1.6	110	5
44	F	MOGA2	1	#NAN	#NAN	77.5	9.7	0.32	25.5	-3.1	0.36	5.0	1.42	26.3	1466	1.6	119	6
45	F	MOGA2	0	1.11E+01	4.78E-04	124.5	8.1	0.41	24.9	-2.2	0.37	5.8	1.52	24.1	1420	1.6	108	5
46	F	MOGA2	0	1.08E+01	3.41E-04	121.7	8.7	0.34	29.4	-3.8	0.36	5.0	1.30	23.6	1421	1.6	100	5
47	F	MOGA2	0	1.11E+01	5.02E-04	124.5	8.2	0.42	25.8	-2.0	0.36	5.9	1.53	23.2	1409	1.6	109	5
48	F	MOGA2	0	9.20E+00	3.30E-04	99.6	8.6	0.38	20.4	-2.4	0.37	6.0	1.28	26.7	1449	1.6	86	6
49	F	MOGA2	1	#NAN	#NAN	85.8	8.6	0.40	19.2	-4.5	0.39	6.5	1.48	24.9	1480	1.6	110	5
50	F	MOGA2	0	1.03E+01	6.72E-05	121.7	8.3	0.35	32.7	-4.8	0.36	5.0	1.41	25.3	1404	1.6	86	4
51	F	MOGA2	1	#NAN	#NAN	102.4	9.2	0.42	32.4	-5.0	0.38	5.7	1.37	25.0	1426	1.6	124	4
52	F	MOGA2	0	9.41E+00	3.68E-04	99.6	8.8	0.38	18.0	-3.6	0.36	5.6	1.36	28.6	1456	1.6	91	5
53	F	MOGA2	0	1.04E+01	6.03E-04	99.6	9.2	0.45	16.8	-2.9	0.37	5.1	1.35	30.0	1457	1.6	105	5
54	F	MOGA2	1	#NAN	#NAN	80.3	9.8	0.42	33.0	-3.4	0.40	5.0	1.36	30.0	1480	1.6	103	5
55	F	MOGA2	#NAN	#NAN	#NAN	130.0	8.9	0.39	17.7	-3.8	0.35	5.1	1.29	26.3	1426	1.6	80	5
56	F	MOGA2	1	#NAN	#NAN	72.0	7.7	0.44	31.2	-4.2	0.32	5.8	1.38	23.0	1422	1.6	76	6
57	F	MOGA2	0	9.18E+00	-3.89E-05	107.9	7.9	0.38	20.1	-4.5	0.33	5.1	1.33	28.6	1380	1.6	73	6
58	F	MOGA2	0	1.05E+01	7.02E-04	107.9	8.0	0.43	27.0	-2.0	0.40	6.3	1.50	27.6	1428	1.6	112	5
59	F	MOGA2	1	#NAN	#NAN	80.3	7.7	0.34	29.4	-3.6	0.33	6.3	1.33	23.6	1437	1.6	107	4
60	F	MOGA2	0	9.25E+00	3.15E-04	94.1	7.6	0.32	28.5	-2.8	0.32	5.6	1.49	28.8	1382	1.6	86	4
61	F	MOGA2	0	1.09E+01	4.83E-04	124.5	8.1	0.41	24.9	-2.0	0.37	6.0	1.40	24.3	1423	1.6	105	5
62	F	MOGA2	0	1.07E+01	5.10E-04	107.9	8.6	0.40	23.7	-3.1	0.37	5.5	1.44	24.2	1460	1.6	105	5
63	F	MOGA2	0	1.14E+01	7.55E-04	116.2	8.0	0.43	24.9	-2.0	0.36	5.9	1.60	23.3	1407	1.6	119	5
64	F	MOGA2	0	8.75E+00	5.72E-05	99.6	8.7	0.42	19.2	-2.3	0.37	6.1	1.28	27.6	1445	1.6	76	6

65	F	MOGA2	1	#NAN	#NAN	85.8	8.6	0.40	19.2	-4.5	0.39	5.2	1.48	24.9	1480	1.6	110	5
66	F	MOGA2	0	9.30E+00	3.04E-04	94.1	7.6	0.32	28.5	-2.8	0.32	5.6	1.49	28.8	1404	1.6	86	4
67	F	MOGA2	1	#NAN	#NAN	102.4	7.7	0.42	27.6	-5.0	0.38	5.7	1.37	25.0	1427	1.6	124	4
68	F	MOGA2	1	#NAN	#NAN	85.8	9.1	0.41	15.0	-3.4	0.35	5.8	1.30	30.0	1480	1.6	93	6
69	F	MOGA2	0	1.02E+01	6.11E-04	99.6	9.2	0.45	17.1	-3.0	0.37	5.1	1.33	30.0	1458	1.6	105	5
70	F	MOGA2	0	1.04E+01	4.87E-04	102.4	9.8	0.42	33.0	-3.9	0.39	5.0	1.31	30.0	1480	1.6	102	5
71	F	MOGA2	#NAN	#NAN	#NAN	130.0	8.9	0.38	17.7	-3.8	0.35	5.1	1.29	26.3	1442	1.6	80	5
72	F	MOGA2	#NAN	#NAN	#NAN	74.8	7.8	0.34	20.4	-4.2	0.32	5.8	1.59	23.0	1422	1.6	115	4
73	F	MOGA2	1	#NAN	#NAN	124.5	8.1	0.41	24.9	-2.2	0.33	5.1	1.33	24.1	1420	1.6	108	5
74	F	MOGA2	0	1.08E+01	7.19E-04	107.9	8.1	0.45	27.9	-2.8	0.40	6.1	1.52	27.5	1435	1.6	115	5
75	F	MOGA2	1	#NAN	#NAN	102.4	7.8	0.34	29.4	-3.6	0.33	5.3	1.33	23.9	1437	1.6	107	4
76	F	MOGA2	0	9.01E+00	3.35E-04	85.8	7.7	0.33	23.4	-2.5	0.34	5.8	1.40	27.7	1408	1.6	85	4
77	F	MOGA2	1	#NAN	#NAN	85.8	9.5	0.36	16.5	-2.7	0.38	6.0	1.29	26.5	1450	1.6	99	5
78	F	MOGA2	0	1.15E+01	1.11E-03	102.4	8.4	0.44	21.0	-2.0	0.40	6.5	1.52	26.3	1480	1.6	130	5
79	F	MOGA2	0	1.14E+01	8.70E-04	105.1	8.8	0.33	19.8	-3.0	0.37	5.8	1.54	23.3	1430	1.6	123	5
80	F	MOGA2	1	#NAN	#NAN	83.0	9.7	0.42	32.4	-3.4	0.39	5.1	1.30	26.9	1463	1.6	106	5
81	F	MOGA2	0	8.94E+00	2.29E-04	94.1	7.8	0.32	28.5	-2.8	0.32	5.8	1.43	28.8	1404	1.6	81	4
82	F	MOGA2	1	#NAN	#NAN	102.4	9.2	0.42	27.6	-5.0	0.38	5.7	1.37	25.0	1427	1.6	124	4
83	F	MOGA2	0	8.82E+00	5.77E-04	85.8	9.1	0.43	15.0	-3.4	0.33	5.8	1.30	30.0	1380	1.6	93	6
84	F	MOGA2	0	1.04E+01	6.64E-04	99.6	9.4	0.44	15.0	-2.8	0.37	5.0	1.28	30.0	1462	1.6	109	5
85	F	MOGA2	0	1.08E+01	3.60E-04	102.4	9.8	0.33	33.0	-3.9	0.39	5.0	1.31	30.0	1480	1.6	102	4
86	F	MOGA2	0	9.84E+00	-2.06E-05	116.2	8.9	0.39	17.7	-3.8	0.36	5.3	1.29	26.3	1442	1.6	80	5
87	F	MOGA2	1	#NAN	#NAN	74.8	7.8	0.34	15.6	-4.2	0.32	5.3	1.38	23.0	1437	1.6	114	4
88	F	MOGA2	1	#NAN	#NAN	124.5	8.1	0.41	24.9	-4.2	0.33	5.6	1.33	22.8	1386	1.6	108	5
89	F	MOGA2	0	9.29E+00	-7.24E-05	107.9	8.1	0.45	27.9	-2.8	0.40	6.1	1.41	22.1	1435	1.6	76	5
90	F	MOGA2	1	#NAN	#NAN	99.6	7.8	0.39	30.0	-4.6	0.33	5.3	1.33	23.9	1402	1.6	109	4
91	F	MOGA2	0	7.89E+00	2.58E-04	85.8	7.7	0.33	23.4	-2.5	0.34	5.8	1.30	27.7	1407	1.6	75	4
92	F	MOGA2	0	9.41E+00	3.68E-04	99.6	8.8	0.38	18.0	-3.6	0.36	5.6	1.36	28.6	1456	1.6	91	5
93	F	MOGA2	0	9.01E+00	3.35E-04	85.8	7.7	0.33	23.4	-2.5	0.34	5.8	1.40	27.7	1408	1.6	85	4
94	F	MOGA2	0	1.10E+01	7.07E-04	105.1	8.7	0.31	19.5	-2.9	0.37	6.0	1.51	22.2	1428	1.6	116	5
95	F	MOGA2	1	#NAN	#NAN	83.0	9.7	0.42	31.8	-3.4	0.39	5.1	1.30	24.1	1463	1.6	106	5
96	F	MOGA2	0	7.78E+00	2.04E-04	77.5	8.7	0.36	17.7	-2.7	0.37	5.9	1.28	26.4	1453	1.6	70	6
97	F	MOGA2	0	1.09E+01	8.47E-04	99.6	8.5	0.41	22.8	-2.4	0.40	6.1	1.43	25.3	1480	1.6	118	5
98	F	MOGA2	0	1.03E+01	4.52E-04	99.6	9.5	0.40	31.8	-3.8	0.40	5.2	1.35	22.0	1458	1.6	99	5
99	F	MOGA2	0	9.02E+00	3.34E-04	85.8	7.7	0.33	21.0	-3.0	0.40	6.4	1.47	27.9	1408	1.6	85	4
100	F	MOGA2	0	9.30E+00	3.04E-04	94.1	7.6	0.32	28.5	-2.8	0.32	5.6	1.49	28.8	1404	1.6	86	4
101	F	MOGA2	1	#NAN	#NAN	74.8	7.8	0.34	15.6	-4.2	0.32	5.3	1.38	23.0	1437	1.6	116	4
102	F	MOGA2	1	#NAN	#NAN	80.3	8.1	0.42	24.9	-4.2	0.33	5.6	1.33	22.8	1394	1.6	108	5
103	F	MOGA2	0	9.00E+00	3.39E-04	85.8	7.7	0.45	27.9	-2.8	0.32	5.8	1.40	27.7	1408	1.6	85	4
104	F	MOGA2	1	#NAN	#NAN	102.4	8.1	0.39	30.0	-4.6	0.33	6.3	1.31	26.5	1410	1.6	109	4
105	F	MOGA2	1	#NAN	#NAN	96.9	8.5	0.41	22.8	-2.5	0.34	5.8	1.30	27.7	1480	1.6	118	5
106	F	MOGA2	0	9.72E+00	5.26E-04	99.6	8.7	0.38	18.0	-3.8	0.35	5.6	1.36	28.3	1463	1.6	98	5
107	F	MOGA2	0	8.42E+00	1.67E-04	83.0	7.6	0.31	24.9	-2.7	0.34	5.8	1.38	27.9	1416	1.6	76	4
108	F	MOGA2	0	1.09E+01	8.47E-04	99.6	8.5	0.41	22.8	-2.4	0.40	6.1	1.43	25.3	1480	1.6	118	5
109	F	MOGA2	1	#NAN	#NAN	83.0	9.7	0.42	29.4	-3.2	0.39	5.1	1.35	24.1	1397	1.6	106	4
110	T	MOGA2	0	7.79E+00	2.83E-04	77.5	7.7	0.33	23.4	-2.5	0.34	5.8	1.28	26.4	1453	1.6	75	4
111	F	MOGA2	1	#NAN	#NAN	99.6	8.5	0.41	22.8	-2.4	0.34	5.8	1.30	25.4	1480	1.6	118	5
112	F	MOGA2	0	9.41E+00	3.68E-04	99.6	8.8	0.38	18.0	-3.6	0.36	5.6	1.36	28.6	1456	1.6	91	5
113	F	MOGA2	#NAN	#NAN	#NAN	91.3	8.0	0.30	23.7	-3.2	0.39	6.4	1.49	28.6	1403	1.6	80	5
114	F	MOGA2	#NAN	#NAN	#NAN	80.3	7.6	0.31	22.8	-2.9	0.35	6.0	1.53	27.8	1385	1.6	85	4
115	F	MOGA2	1	#NAN	#NAN	80.3	8.7	0.37	18.3	-2.5	0.38	5.9	1.28	25.9	1446	1.6	90	6
116	F	MOGA2	0	1.05E+01	5.90E-04	99.6	8.4	0.42	19.8	-2.5	0.40	5.9	1.49	26.4	1480	1.6	108	5
117	F	MOGA2	0	1.04E+01	7.37E-04	105.1	7.6	0.34	21.0	-5.0	0.40	6.4	1.47	22.5	1432	1.6	112	5
118	F	MOGA2	0	1.00E+01	5.80E-04	96.9	9.3	0.45	17.4	-2.8	0.38	5.2	1.28	29.2	1458	1.6	102	5
119	F	MOGA2	1	#NAN	#NAN	99.6	8.4	0.45	17.1	-3.0	0.37	5.1	1.33	30.0	1458	1.6	129	5
120	F	MOGA2	#NAN	#NAN	#NAN	105.1	8.7	0.34	18.6	-3.0	0.37	5.8	1.59	22.5	1433	1.6	107	5
121	F	MOGA2	0	1.03E+01	4.81E-04	105.1	9.7	0.42	29.4	-3.2	0.39	5.1	1.38	24.1	1397	1.6	101	6
122	F	MOGA2	0	8.38E+00	1.38E-04	96.9	7.7	0.33	23.4	-2.5	0.34	5.2	1.28	29.2	1458	1.6	75	4
123	F	MOGA2	1	#NAN	#NAN	99.6	8.5	0.41	18.0	-2.7	0.34	5.8	1.29	25.3	1384	1.6	118	5
124	F	MOGA2	0	9.23E+00	4.47E-04	91.3	8.7	0.39	18.0	-3.8	0.35	5.5	1.38	28.6	1451	1.6	92	5
125	F	MOGA2	#NAN	#NAN	#NAN	91.3	8.0	0.30	23.7	-3.2	0.34	6.4	1.49	28.6	1403	1.6	80	5
126	F	MOGA2	1	#NAN	#NAN	80.3	7.6	0.31	22.8	-2.9	0.35	5.0	1.37	27.8	1385	1.6	85	4
127	F	MOGA2	1	#NAN	#NAN	80.3	8.7	0.37	18.3	-2.1	0.39	6.0	1.33	25.9	1446	1.6	90	6
128	F	MOGA2	0	1.04E+01	6.39E-04	99.6	8.4	0.42	19.8	-2.5	0.40	5.4	1.39	27.1	1480	1.6	109	5
129	T	MOGA2	0	9.90E+00	6.73E-04	96.9	7.6	0.36	20.7	-4.8	0.40	6.5	1.47	22.0	1435	1.6	104	5
130	F	MOGA2	1	#NAN	#NAN	96.9	9.3	0.45	27.0	-2.8	0.38	5.2	1.28	29.2	1393	1.6	102	5
131	F	MOGA2	1	#NAN	#NAN	99.6	8.4	0.45	15.9	-3.0	0.40	5.1	1.33	30.0	1458	1.6	129	5
132	F	MOGA2	#NAN	#NAN	#NAN	105.1	8.7											

139	F	MOGA2	1	#NAN	#NAN	83.0	8.8	0.42	15.3	-3.4	0.32	5.8	1.30	29.8	1413	1.6	107	6
140	F	MOGA2	1	#NAN	#NAN	72.0	8.6	0.39	17.4	-2.6	0.37	5.7	1.31	25.6	1453	1.6	70	6
141	T	MOGA2	0	7.79E+00	2.83E-04	77.5	7.7	0.33	23.4	-2.5	0.34	5.8	1.28	26.4	1453	1.6	75	4
142	F	MOGA2	1	#NAN	#NAN	99.6	8.4	0.45	15.9	-3.0	0.37	5.2	1.33	22.0	1458	1.6	129	5
143	F	MOGA2	#NAN	#NAN	105.1	8.7	0.35	16.2	-3.0	0.37	5.9	1.59	22.4	1432	1.6	88	5	
144	F	MOGA2	0	9.07E+00	3.53E-04	94.1	8.6	0.38	17.4	-2.1	0.37	6.2	1.37	27.2	1477	1.6	85	6
145	F	MOGA2	0	1.05E+01	7.69E-04	102.4	8.3	0.34	22.2	-3.9	0.39	6.4	1.40	23.6	1462	1.6	114	5
146	F	MOGA2	0	1.04E+01	5.80E-04	102.4	8.3	0.30	21.0	-3.0	0.40	5.0	1.46	27.6	1421	1.6	105	5
147	F	MOGA2	0	1.07E+01	6.29E-04	105.1	8.4	0.34	21.0	-3.0	0.36	5.0	1.47	27.9	1432	1.6	110	5
148	F	MOGA2	0	9.14E+00	3.38E-04	96.9	8.7	0.30	21.9	-2.0	0.40	6.3	1.30	26.6	1469	1.6	86	5
149	F	MOGA2	0	1.15E+01	1.13E-03	99.6	8.7	0.33	18.9	-3.1	0.38	6.0	1.45	23.5	1424	1.6	130	5
150	F	MOGA2	1	#NAN	#NAN	83.0	8.8	0.32	15.3	-3.4	0.32	5.5	1.29	29.8	1413	1.6	107	6
151	F	MOGA2	1	#NAN	#NAN	72.0	7.9	0.39	17.4	-2.6	0.37	5.7	1.31	25.6	1453	1.6	71	6
152	F	MOGA2	0	8.65E+00	3.11E-04	85.8	8.9	0.37	16.5	-2.7	0.38	6.0	1.37	26.5	1458	1.6	81	6
153	F	MOGA2	0	1.04E+01	6.10E-04	102.4	8.4	0.42	21.3	-2.4	0.40	6.2	1.41	24.4	1480	1.6	106	5
154	F	MOGA2	0	1.03E+01	7.27E-04	105.1	7.7	0.33	16.2	-3.0	0.40	6.4	1.47	27.9	1432	1.6	110	5
155	F	MOGA2	0	1.15E+01	1.11E-03	102.4	8.3	0.45	20.7	-2.2	0.39	6.4	1.54	27.3	1480	1.6	130	5
156	F	MOGA2	#NAN	#NAN	105.1	9.1	0.33	19.8	-3.0	0.37	5.9	1.54	23.3	1430	1.6	93	6	
157	F	MOGA2	0	7.78E+00	2.02E-04	77.5	8.7	0.37	15.3	-2.7	0.37	5.9	1.28	26.5	1453	1.6	70	6
158	F	MOGA2	0	1.06E+01	7.31E-04	96.9	8.5	0.39	23.1	-2.2	0.38	6.1	1.48	25.7	1480	1.6	113	5
159	F	MOGA2	0	7.91E+00	2.07E-04	80.3	7.6	0.30	23.7	-2.3	0.34	5.5	1.37	27.4	1458	1.6	72	4
160	T	MOGA2	0	1.02E+01	7.78E-04	96.9	7.6	0.34	19.2	-4.8	0.40	6.5	1.49	23.5	1429	1.6	112	5
161	F	MOGA2	0	7.96E+00	1.94E-04	80.3	8.4	0.34	21.0	-3.0	0.34	5.5	1.37	27.4	1458	1.6	72	4
162	F	MOGA2	0	7.78E+00	2.04E-04	77.5	8.7	0.36	17.7	-2.7	0.37	5.9	1.28	26.4	1453	1.6	70	6
163	F	MOGA2	#NAN	#NAN	99.6	8.7	0.33	18.9	-2.9	0.37	5.9	1.45	23.5	1424	1.6	130	5	
164	F	MOGA2	1	#NAN	#NAN	83.0	8.8	0.32	22.5	-3.4	0.32	5.5	1.35	29.8	1414	1.6	107	6
165	F	MOGA2	0	7.78E+00	2.04E-04	77.5	8.7	0.36	17.7	-2.7	0.37	5.9	1.28	26.4	1453	1.6	70	6
166	F	MOGA2	0	8.63E+00	3.16E-04	85.8	8.7	0.36	16.5	-2.7	0.38	6.0	1.37	26.5	1458	1.6	81	6
167	F	MOGA2	1	#NAN	#NAN	80.3	8.4	0.42	21.9	-2.4	0.35	6.2	1.41	24.4	1480	1.6	106	5
168	T	MOGA2	0	1.02E+01	7.53E-04	105.1	7.6	0.30	15.0	-3.5	0.40	6.4	1.47	29.3	1391	1.6	111	5
169	F	MOGA2	#NAN	#NAN	94.1	8.6	0.37	21.6	-2.4	0.37	6.3	1.59	27.5	1462	1.6	122	5	
170	F	MOGA2	#NAN	#NAN	105.1	9.1	0.33	15.0	-2.8	0.37	5.9	1.54	23.3	1430	1.6	103	6	
171	F	MOGA2	1	#NAN	#NAN	77.5	8.7	0.37	15.3	-2.7	0.37	5.9	1.28	26.5	1453	1.6	109	5
172	F	MOGA2	1	#NAN	#NAN	91.3	8.3	0.41	18.6	-2.3	0.39	6.1	1.43	24.4	1460	1.6	118	5
173	F	MOGA2	0	7.91E+00	2.07E-04	80.3	7.6	0.30	23.7	-2.3	0.34	5.5	1.37	27.4	1458	1.6	72	4
174	F	MOGA2	#NAN	#NAN	74.8	7.6	0.34	19.5	-4.8	0.40	6.5	1.49	23.5	1429	1.6	72	5	
175	F	ULH	0	8.82E+00	3.88E-04	96.9	7.8	0.43	28.8	-4.8	0.37	5.8	1.33	28.7	1446	1.6	84	5
176	F	ULH	0	9.95E+00	4.81E-04	105.1	8.7	0.39	22.2	-4.1	0.35	6.0	1.35	23.4	1480	1.6	98	6
177	F	ULH	0	1.06E+01	6.03E-04	113.4	8.1	0.31	19.5	-2.7	0.40	6.2	1.49	26.0	1436	1.6	108	5
178	F	ULH	1	#NAN	#NAN	83.0	9.8	0.36	22.2	-2.3	0.35	5.5	1.43	24.5	1468	1.6	123	5
179	F	ULH	0	8.52E+00	1.01E-04	85.8	9.6	0.44	27.6	-2.1	0.34	5.1	1.41	27.7	1403	1.6	75	6
180	F	ULH	0	1.05E+01	5.80E-04	91.3	7.6	0.41	25.5	-3.9	0.38	5.4	1.52	29.4	1384	1.6	105	4
181	F	ULH	1	#NAN	#NAN	74.8	8.5	0.32	29.7	-3.0	0.36	6.3	1.30	22.1	1417	1.6	114	4
182	F	ULH	0	1.16E+01	-2.15E-04	130.0	9.3	0.39	15.9	-3.4	0.39	5.7	1.44	23.8	1456	1.6	88	5
183	F	ULH	#NAN	#NAN	119.0	9.0	0.34	31.5	-4.7	0.32	5.3	1.57	26.6	1422	1.6	82	4	
184	F	ULH	0	1.12E+01	1.18E-03	110.7	8.4	0.35	17.7	-3.7	0.33	6.4	1.56	27.0	1395	1.6	129	6
185	F	MOGA2	0	8.49E+00	4.65E-04	85.8	7.8	0.43	28.8	-4.8	0.37	5.8	1.33	28.7	1446	1.6	84	5
186	F	MOGA2	0	1.02E+01	4.13E-04	94.1	8.7	0.39	23.4	-4.0	0.35	5.5	1.36	23.4	1447	1.6	98	4
187	F	MOGA2	0	1.04E+01	6.53E-04	113.4	8.1	0.31	19.5	-3.7	0.33	6.4	1.48	26.0	1436	1.6	108	5
188	F	MOGA2	1	#NAN	#NAN	83.0	9.8	0.36	22.2	-2.4	0.35	5.5	1.43	24.5	1467	1.6	123	5
189	F	MOGA2	0	8.45E+00	4.72E-05	88.6	8.9	0.42	27.3	-2.2	0.34	5.1	1.41	26.7	1410	1.6	70	6
190	F	MOGA2	1	#NAN	#NAN	88.6	7.6	0.41	24.6	-3.4	0.37	5.7	1.53	29.3	1394	1.6	104	4
191	F	MOGA2	1	#NAN	#NAN	74.8	8.5	0.32	30.3	-3.0	0.33	6.3	1.30	23.4	1415	1.6	114	4
192	F	MOGA2	0	9.13E+00	4.03E-04	94.1	7.7	0.43	24.0	-3.0	0.36	5.2	1.47	27.7	1380	1.6	88	5
193	F	MOGA2	#NAN	#NAN	119.0	9.0	0.34	31.5	-4.7	0.32	5.3	1.57	26.6	1422	1.6	82	4	
194	F	MOGA2	#NAN	#NAN	110.7	8.5	0.36	16.8	-3.8	0.32	6.4	1.60	27.0	1393	1.6	118	6	
195	F	MOGA2	0	1.05E+01	5.83E-04	116.2	8.3	0.30	19.5	-3.8	0.32	6.4	1.51	25.7	1424	1.6	106	5
196	F	MOGA2	1	#NAN	#NAN	83.0	9.8	0.36	22.2	-2.5	0.35	5.5	1.43	23.2	1470	1.6	123	5
197	F	MOGA2	0	8.42E+00	5.35E-05	88.6	8.4	0.35	17.7	-2.2	0.34	5.1	1.41	26.7	1410	1.6	70	6
198	F	MOGA2	1	#NAN	#NAN	88.6	7.6	0.42	24.6	-3.4	0.37	5.7	1.53	29.3	1394	1.6	104	4
199	F	MOGA2	#NAN	#NAN	74.8	8.5	0.32	30.3	-3.0	0.33	6.3	1.51	23.4	1415	1.6	114	4	
200	F	MOGA2	0	8.98E+00	4.40E-04	88.6	7.7	0.43	24.0	-3.0	0.36	5.2	1.41	26.7	1410	1.6	88	5
201	F	MOGA2	#NAN	#NAN	119.0	9.0	0.34	31.5	-4.7	0.32	5.3	1.57	26.6	1422	1.6	82	4	
202	F	MOGA2	#NAN	#NAN	110.7	8.5	0.36	16.8	-3.8	0.32	6.4	1.60	27.0	1393	1.6	78	6	
203	F	MOGA2	0	9.83E+00	5.08E-04	102.4	8.6	0.39	21.9	-4.0	0.36	6.1	1.35	22.0	1480	1.6	97	6
204	F	MOGA2	0	1.13E+01	1.18E-03	105.1	8.5	0.37	18.0	-3.4	0.33	6.2	1.60	26.9	1396	1.6	130	6
205	F	MOGA2	0	9.07E+00	2.50E-04	91.3	7.6	0.42	29.4	-4.5	0.37	5.6	1.53	29.3	1394	1.6	83	4
206	F	MOGA2	#NAN	#NAN	74.8	8.5	0.32	30.3	-3.									

213	F	MOGA2	0	8.19E+00	3.32E-04	88.6	7.6	0.45	24.0	-4.8	0.36	5.9	1.31	30.0	1434	1.6	79	5
214	F	MOGA2	0	1.03E+01	5.68E-04	113.4	8.2	0.30	19.8	-3.8	0.33	6.4	1.51	26.0	1439	1.6	104	5
215	F	MOGA2	0	1.07E+01	-1.58E-04	130.0	8.4	0.33	15.6	-4.0	0.33	5.3	1.57	24.0	1390	1.6	82	4
216	F	MOGA2	#NAN	#NAN	#NAN	110.7	8.5	0.36	15.6	-3.8	0.35	6.5	1.60	26.9	1394	1.6	96	4
217	F	MOGA2	0	9.18E+00	3.02E-04	96.9	8.4	0.40	20.4	-3.7	0.35	6.3	1.40	22.9	1479	1.6	85	6
218	F	MOGA2	1	#NAN	#NAN	91.3	7.8	0.43	24.0	-3.0	0.36	5.2	1.41	26.7	1395	1.6	130	6
219	F	MOGA2	0	1.07E+01	7.07E-04	116.2	8.6	0.36	15.0	-3.8	0.34	6.5	1.52	27.6	1412	1.6	114	5
220	F	MOGA2	0	8.52E+00	3.46E-04	91.3	7.6	0.45	24.6	-5.0	0.37	6.0	1.37	28.9	1436	1.6	81	5
221	F	MOGA2	0	1.03E+01	5.67E-04	113.4	8.2	0.30	19.8	-3.8	0.33	6.4	1.51	25.9	1439	1.6	104	5
222	F	MOGA2	0	8.41E+00	5.84E-04	80.3	7.6	0.44	25.5	-4.8	0.40	6.1	1.28	30.0	1466	1.6	87	6
223	F	MOGA2	0	9.42E+00	3.73E-04	99.6	8.4	0.39	19.5	-3.7	0.36	6.3	1.37	22.0	1480	1.6	90	6
224	F	MOGA2	0	9.44E+00	3.69E-04	99.6	8.6	0.39	21.9	-4.0	0.36	6.1	1.35	22.0	1480	1.6	90	6
225	F	MOGA2	0	8.40E+00	6.02E-05	91.3	7.8	0.43	18.3	-3.0	0.36	5.2	1.41	27.0	1395	1.6	70	6
226	F	MOGA2	0	1.08E+01	7.59E-04	107.9	9.1	0.34	16.2	-3.7	0.34	6.5	1.55	27.1	1403	1.6	117	5
227	F	MOGA2	0	1.03E+01	5.67E-04	113.4	8.2	0.30	19.8	-3.8	0.33	6.4	1.51	25.9	1439	1.6	104	5
228	F	MOGA2	#NAN	#NAN	#NAN	113.4	8.1	0.31	19.5	-3.7	0.33	6.4	1.48	26.0	1436	1.6	108	5
229	F	MOGA2	0	8.47E+00	5.67E-04	80.3	8.6	0.39	21.9	-4.0	0.36	6.1	1.28	30.0	1466	1.6	87	6
230	F	MOGA2	0	8.88E+00	4.96E-04	94.1	8.3	0.41	22.8	-4.7	0.37	6.1	1.34	29.7	1457	1.6	89	6
231	F	MOGA2	#NAN	#NAN	#NAN	99.6	8.6	0.39	20.1	-3.8	0.33	6.4	1.51	25.9	1480	1.6	90	6
232	F	MOGA2	0	1.05E+01	7.55E-04	110.7	8.1	0.30	18.9	-3.7	0.32	6.4	1.52	26.8	1439	1.6	114	6
233	F	MOGA2	0	1.09E+01	9.35E-04	110.7	8.3	0.33	16.2	-4.1	0.32	6.4	1.54	27.2	1424	1.6	123	6
234	F	MOGA2	0	8.39E+00	2.39E-04	94.1	7.6	0.45	23.4	-5.0	0.36	5.8	1.32	30.0	1448	1.6	77	5
235	F	MOGA2	0	8.28E+00	4.38E-04	83.0	8.3	0.42	23.7	-4.5	0.36	6.1	1.30	30.0	1480	1.6	82	6
236	F	MOGA2	0	9.65E+00	2.62E-04	96.9	9.7	0.45	22.8	-4.7	0.38	6.1	1.34	24.5	1457	1.6	89	4
237	F	MOGA2	#NAN	#NAN	#NAN	99.6	8.7	0.34	20.1	-2.7	0.33	6.4	1.51	26.0	1397	1.6	90	6
238	F	MOGA2	0	1.06E+01	7.42E-04	113.4	8.1	0.30	18.9	-3.7	0.32	6.4	1.48	26.0	1439	1.6	114	6
239	F	MOGA2	0	1.10E+01	9.10E-04	113.4	8.3	0.31	15.9	-4.1	0.32	6.4	1.55	26.8	1431	1.6	122	6
240	F	MOGA2	0	8.09E+00	1.32E-04	94.1	7.6	0.43	23.1	-4.4	0.36	6.0	1.32	28.8	1442	1.6	70	5
241	F	MOGA2	0	1.07E+01	6.40E-04	116.2	8.4	0.34	19.5	-3.3	0.34	6.4	1.48	26.2	1446	1.6	111	5
242	F	MOGA2	0	1.07E+01	9.12E-04	113.4	8.4	0.33	15.6	-3.9	0.32	6.5	1.53	27.8	1402	1.6	119	6
243	F	MOGA2	0	8.18E+00	5.08E-04	80.3	7.6	0.42	22.8	-5.0	0.36	6.0	1.28	30.0	1432	1.6	84	5
244	T	MOGA2	0	8.40E+00	5.85E-04	80.3	8.1	0.31	19.5	-3.7	0.33	6.1	1.28	30.0	1466	1.6	87	6
245	F	MOGA2	0	1.04E+01	5.72E-04	113.4	8.5	0.30	17.1	-4.1	0.32	6.3	1.54	26.6	1432	1.6	105	6
246	F	MOGA2	0	1.07E+01	9.10E-04	113.4	8.4	0.33	22.8	-4.4	0.36	6.5	1.53	27.8	1402	1.6	119	6
247	F	MOGA2	0	1.06E+01	5.64E-04	119.0	8.4	0.33	20.7	-3.5	0.34	6.5	1.45	26.2	1451	1.6	107	5
248	F	MOGA2	0	1.04E+01	6.67E-04	113.4	8.4	0.33	15.6	-3.9	0.32	6.5	1.53	27.8	1442	1.6	109	6
249	F	MOGA2	0	8.14E+00	4.71E-04	80.3	7.7	0.42	23.4	-5.0	0.35	6.0	1.29	30.0	1433	1.6	82	5
250	F	MOGA2	1	#NAN	#NAN	80.3	8.1	0.31	29.1	-3.7	0.36	6.1	1.28	22.0	1466	1.6	87	6
251	F	MOGA2	0	1.04E+01	6.47E-04	113.4	8.1	0.31	19.5	-3.7	0.36	6.4	1.49	26.0	1434	1.6	108	5
252	F	MOGA2	#NAN	#NAN	#NAN	80.3	7.6	0.42	22.8	-4.0	0.33	6.5	1.53	22.0	1432	1.6	84	5
253	F	MOGA2	0	8.16E+00	1.16E-04	94.1	8.1	0.30	18.9	-3.7	0.32	6.4	1.32	28.8	1442	1.6	70	6
254	F	MOGA2	0	1.10E+01	9.13E-04	113.4	8.3	0.33	16.2	-4.1	0.32	6.4	1.55	26.8	1424	1.6	123	6
255	F	MOGA2	0	7.65E+00	2.34E-04	80.3	8.1	0.31	19.5	-3.7	0.33	6.1	1.28	30.0	1466	1.6	70	6
256	F	MOGA2	0	1.11E+01	8.91E-04	113.4	8.3	0.33	16.2	-4.1	0.33	6.1	1.55	26.8	1424	1.6	123	6
257	F	MOGA2	0	1.02E+01	5.85E-04	113.4	8.0	0.30	19.2	-3.7	0.32	6.4	1.49	25.9	1439	1.6	104	5
258	T	MOGA2	0	1.07E+01	9.23E-04	110.7	8.5	0.34	15.0	-3.9	0.32	6.5	1.54	26.6	1393	1.6	119	6
259	F	MOGA2	1	#NAN	#NAN	110.7	8.1	0.30	23.7	-5.0	0.36	6.0	1.28	26.9	1439	1.6	114	6
260	F	MOGA2	0	1.12E+01	8.54E-04	110.7	8.3	0.38	16.2	-2.3	0.32	5.4	1.55	27.2	1395	1.6	123	6
261	F	MOGA2	0	8.13E+00	1.96E-04	94.1	7.6	0.39	24.0	-4.4	0.35	6.0	1.30	28.8	1433	1.6	73	5
262	F	MOGA2	#NAN	#NAN	#NAN	113.4	7.6	0.33	15.6	-3.9	0.32	6.5	1.53	27.8	1402	1.6	70	5
263	F	MOGA2	0	8.29E+00	4.88E-04	80.3	7.6	0.41	22.8	-5.0	0.36	6.0	1.28	22.0	1395	1.6	84	5
264	F	MOGA2	1	#NAN	#NAN	77.5	8.1	0.30	19.5	-3.9	0.33	6.2	1.28	29.9	1479	1.6	90	6
265	F	MOGA2	#NAN	#NAN	#NAN	113.4	7.7	0.33	15.6	-3.9	0.32	6.5	1.53	27.8	1398	1.6	80	5
266	F	MOGA2	0	8.55E+00	5.80E-04	85.8	7.7	0.42	23.4	-5.0	0.37	6.0	1.29	25.9	1393	1.6	90	5
267	F	MOGA2	1	#NAN	#NAN	77.5	8.1	0.30	19.5	-3.8	0.33	6.2	1.28	23.2	1479	1.6	90	6
268	F	MOGA2	0	1.12E+01	1.19E-03	113.4	7.9	0.31	15.6	-3.9	0.32	6.5	1.54	27.1	1407	1.6	130	6
269	F	MOGA2	0	1.10E+01	1.06E-03	110.7	8.3	0.33	16.2	-4.1	0.32	6.4	1.54	27.2	1424	1.6	124	6
270	F	MOGA2	0	1.12E+01	1.21E-03	105.1	8.4	0.31	16.2	-3.8	0.33	6.4	1.54	27.0	1421	1.6	130	6
271	T	MOGA2	0	8.17E+00	5.09E-04	80.3	7.7	0.41	22.5	-5.0	0.36	6.0	1.28	30.0	1424	1.6	83	5
272	F	MOGA2	1	#NAN	#NAN	72.0	8.0	0.30	19.8	-3.6	0.33	6.2	1.30	30.0	1471	1.6	89	6
273	F	MOGA2	0	1.11E+01	5.36E-04	113.4	8.4	0.33	15.6	-3.9	0.32	5.1	1.57	22.6	1442	1.6	111	6
274	F	MOGA2	0	8.18E+00	5.08E-04	80.3	7.6	0.42	22.8	-5.0	0.36	6.0	1.28	30.0	1433	1.6	84	5
275	F	MOGA2	0	8.32E+00	5.04E-04	83.0	8.0	0.30	19.8	-3.6	0.33	6.2	1.33	30.0	1406	1.6	84	6
276	F	MOGA2	0	8.18E+00	5.08E-04	80.3	7.6	0.42	22.8	-4.9	0.36	6.0	1.28	30.0	1433	1.6	84	5
277	F	MOGA2	#NAN	#NAN	#NAN	83.0	7.9	0.37	25.5	-5.0	0.36	6.1	1.34	29.1	1431	1.6	77	5
278	F	MOGA2	#NAN	#NAN	#NAN	110.7	8.3	0.34	16.2	-4.1	0.32	6.4	1.55	26.8	1389	1.		

287	F	MOGA2	1	#NAN	#NAN	74.8	8.1	0.31	19.5	-3.7	0.33	6.2	1.29	30.0	1462	1.6	88	6
288	T	MOGA2	0	8.07E+00	5.01E-04	77.5	7.6	0.45	24.3	-5.0	0.35	5.9	1.33	29.7	1416	1.6	83	6
289	T	MOGA2	0	7.62E+00	2.39E-04	80.3	8.5	0.34	15.0	-3.9	0.32	6.5	1.28	30.0	1466	1.6	70	6
290	F	MOGA2	#NAN	#NAN	#NAN	110.7	8.0	0.31	19.8	-3.7	0.32	6.4	1.58	26.9	1445	1.6	98	5
291	F	MOGA2	0	1.04E+01	6.23E-04	116.2	8.4	0.31	15.0	-3.9	0.32	6.4	1.44	26.8	1380	1.6	107	6
292	T	MOGA2	0	1.10E+01	1.07E-03	113.4	8.0	0.30	19.2	-3.7	0.32	6.4	1.49	25.9	1424	1.6	124	6
293	T	MOGA2	0	1.11E+01	1.21E-03	105.1	8.4	0.32	16.2	-3.7	0.33	6.4	1.54	27.0	1422	1.6	130	6
294	F	MOGA2	1	#NAN	#NAN	72.0	7.6	0.43	23.7	-4.5	0.36	5.9	1.28	30.0	1426	1.6	85	5
295	F	MOGA2	#NAN	#NAN	#NAN	74.8	8.4	0.35	15.0	-3.9	0.32	6.5	1.35	28.6	1477	1.6	70	6
296	F	MOGA2	0	1.06E+01	2.85E-04	110.7	9.5	0.31	19.8	-3.7	0.34	6.4	1.58	26.9	1445	1.6	98	4
297	F	MOGA2	0	1.04E+01	6.14E-04	116.2	8.4	0.31	18.0	-3.9	0.32	6.4	1.44	24.1	1380	1.6	107	6
298	F	MOGA2	1	#NAN	#NAN	121.7	7.8	0.30	20.7	-3.7	0.32	6.4	1.44	27.0	1414	1.6	130	6
299	F	MOGA2	0	8.19E+00	5.02E-04	80.3	8.4	0.32	16.2	-3.7	0.33	6.4	1.30	30.0	1424	1.6	83	5
300	F	MOGA2	1	#NAN	#NAN	72.0	7.6	0.43	23.7	-4.5	0.36	5.9	1.28	30.0	1426	1.6	86	5
301	F	MOGA2	0	1.02E+01	5.84E-04	113.4	8.0	0.30	19.2	-3.7	0.32	6.4	1.49	25.9	1439	1.6	104	5
302	F	MOGA2	#NAN	#NAN	#NAN	116.2	8.1	0.31	20.7	-3.8	0.32	6.4	1.48	26.5	1451	1.6	103	5

Appendix D – Optimization results

Optimum network/Optimum aircraft case (5 airports)

d#	PAR	CAT	NO PASS	NDOC	NP	wS	wAR	wTR	wSweep	wTwist	Kink	BPR	eDiam	OPR	eTIT	FPR	Npax	nSeat
0	F	ULH	#NAN	#NAN	#NAN	127.2	9.7	0.31	24.6	-3.5	0.40	5.4	1.32	28.5	1413	1.6	101	6
1	F	ULH	#NAN	#NAN	#NAN	77.5	7.9	0.37	15.9	-2.1	0.35	6.2	1.47	26.6	1440	1.6	103	6
2	F	ULH	0	1.07E+01	6.12E-04	121.7	8.0	0.33	31.8	-3.1	0.37	5.3	1.44	29.8	1447	1.6	97	5
3	F	ULH	0	1.11E+01	8.16E-04	110.7	7.7	0.45	18.9	-5.0	0.36	5.3	1.56	28.0	1388	1.6	107	4
4	F	ULH	0	1.04E+01	1.43E-03	88.6	8.5	0.32	22.5	-2.7	0.40	6.3	1.49	27.8	1468	1.6	112	5
5	F	ULH	#NAN	#NAN	#NAN	107.9	9.0	0.36	22.2	-2.6	0.38	5.9	1.52	23.3	1464	1.6	78	5
6	F	ULH	#NAN	#NAN	#NAN	80.3	9.6	0.36	27.0	-3.6	0.33	6.4	1.54	28.8	1410	1.6	89	5
7	F	ULH	#NAN	#NAN	#NAN	130.0	8.1	0.43	20.7	-2.5	0.39	5.8	1.28	24.2	1434	1.6	76	5
8	F	ULH	1	#NAN	#NAN	94.1	7.8	0.32	25.2	-4.7	0.35	6.3	1.34	22.0	1419	1.6	114	4
9	F	ULH	1	#NAN	#NAN	124.5	8.9	0.37	16.2	-4.3	0.33	6.4	1.46	23.9	1403	1.6	130	6
10	F	ULH	1	#NAN	#NAN	83.0	9.0	0.35	27.3	-2.2	0.36	5.2	1.35	24.5	1386	1.6	123	4
11	F	ULH	0	1.01E+01	4.53E-04	105.1	9.5	0.44	32.1	-3.7	0.34	6.2	1.42	22.5	1462	1.6	90	4
12	F	ULH	1	#NAN	#NAN	80.3	9.4	0.39	15.0	-4.0	0.38	5.5	1.32	26.3	1422	1.6	124	6
13	F	ULH	0	9.13E+00	2.06E-04	99.6	8.7	0.42	21.0	-4.2	0.37	5.0	1.43	25.2	1429	1.6	70	5
14	F	ULH	#NAN	#NAN	#NAN	74.8	9.1	0.33	20.4	-3.3	0.34	5.2	1.57	24.8	1455	1.6	81	4
15	F	ULH	0	9.27E+00	6.35E-04	96.9	7.8	0.39	16.8	-4.3	0.35	5.6	1.39	29.1	1476	1.6	87	5
16	F	ULH	0	8.25E+00	4.44E-04	88.6	8.7	0.41	28.5	-4.6	0.36	6.5	1.30	26.9	1444	1.6	74	6
17	F	ULH	0	8.64E+00	3.48E-04	85.8	9.2	0.30	19.5	-4.6	0.34	5.1	1.38	25.1	1425	1.6	76	5
18	F	ULH	0	1.03E+01	3.61E-04	124.5	9.7	0.40	17.4	-2.1	0.32	6.0	1.36	27.4	1391	1.6	83	4
19	F	ULH	1	#NAN	#NAN	72.0	8.6	0.44	30.0	-2.9	0.39	5.5	1.40	22.8	1431	1.6	117	6
20	F	ULH	0	1.04E+01	9.47E-04	96.9	9.2	0.42	30.6	-3.7	0.39	5.7	1.53	28.2	1401	1.6	105	5
21	F	ULH	0	1.03E+01	7.26E-04	91.3	8.5	0.40	18.3	-3.8	0.39	5.9	1.48	23.7	1400	1.6	99	4
22	F	ULH	#NAN	#NAN	#NAN	119.0	8.2	0.34	24.3	-3.2	0.37	6.1	1.58	26.0	1380	1.6	94	5
23	F	ULH	1	#NAN	#NAN	74.8	8.3	0.41	32.7	-3.2	0.34	5.7	1.43	29.6	1394	1.6	93	6
24	F	ULH	0	1.10E+01	9.18E-04	113.4	8.4	0.38	27.9	-4.1	0.32	5.1	1.50	23.4	1457	1.6	108	6
25	F	ULH	0	1.19E+01	1.52E-03	102.4	9.3	0.38	23.1	-4.4	0.38	6.1	1.50	29.4	1477	1.6	119	4
26	F	ULH	#NAN	#NAN	#NAN	110.7	8.1	0.31	29.1	-2.9	0.37	6.0	1.60	22.8	1415	1.6	84	6
27	F	ULH	1	#NAN	#NAN	102.4	7.7	0.35	26.1	-2.3	0.33	5.6	1.29	27.3	1450	1.6	121	4
28	F	ULH	1	#NAN	#NAN	116.2	8.8	0.34	30.9	-4.9	0.36	5.8	1.37	25.9	1440	1.6	112	4
29	F	ULH	0	1.25E+01	1.70E-03	119.0	9.4	0.43	23.7	-2.7	0.35	5.4	1.55	25.6	1472	1.6	127	6
30	F	MOGA2	1	#NAN	#NAN	127.2	9.7	0.30	24.6	-3.5	0.40	5.4	1.31	28.2	1412	1.6	100	6
31	F	MOGA2	#NAN	#NAN	#NAN	77.5	7.9	0.37	15.3	-2.1	0.35	6.1	1.47	26.0	1440	1.6	102	6
32	F	MOGA2	0	1.04E+01	5.90E-04	119.0	7.7	0.33	31.8	-3.4	0.37	5.4	1.46	30.0	1441	1.6	95	5
33	F	MOGA2	0	1.12E+01	7.88E-04	110.7	7.7	0.45	28.5	-4.5	0.36	5.1	1.56	28.0	1420	1.6	107	4
34	F	MOGA2	0	9.77E+00	6.20E-04	88.6	8.5	0.32	22.5	-2.7	0.40	6.3	1.49	27.8	1468	1.6	93	4
35	F	MOGA2	#NAN	#NAN	#NAN	91.3	9.0	0.36	22.2	-2.6	0.38	5.9	1.52	23.3	1464	1.6	78	5
36	F	MOGA2	#NAN	#NAN	#NAN	102.4	8.1	0.31	27.0	-3.6	0.33	6.4	1.54	28.8	1406	1.6	89	5
37	F	MOGA2	1	#NAN	#NAN	130.0	8.1	0.43	20.7	-2.5	0.33	5.8	1.28	24.2	1434	1.6	91	5
38	F	MOGA2	1	#NAN	#NAN	94.1	7.8	0.32	15.6	-4.7	0.35	6.3	1.34	22.0	1419	1.6	114	5
39	F	MOGA2	1	#NAN	#NAN	124.5	8.9	0.37	16.2	-4.3	0.33	6.4	1.46	27.2	1403	1.6	130	6
40	F	MOGA2	1	#NAN	#NAN	83.0	9.0	0.40	27.0	-2.2	0.36	5.0	1.29	24.5	1388	1.6	123	4
41	F	MOGA2	0	1.04E+01	4.05E-04	116.2	9.8	0.45	33.0	-3.7	0.34	6.0	1.37	22.6	1450	1.6	85	4
42	F	MOGA2	1	#NAN	#NAN	80.3	9.5	0.34	15.0	-4.0	0.39	5.5	1.32	26.3	1422	1.6	124	6
43	F	MOGA2	0	9.29E+00	3.59E-04	99.6	8.5	0.42	20.7	-4.1	0.38	5.0	1.43	25.2	1413	1.6	77	5
44	F	MOGA2	#NAN	#NAN	#NAN	74.8	9.1	0.30	20.4	-3.4	0.34	5.2	1.57	24.8	1455	1.6	101	4
45	F	MOGA2	0	1.09E+01	3.88E-04	119.0	9.4	0.43	23.7	-2.7	0.35	5.4	1.55	25.6	1476	1.6	87	5
46	F	MOGA2	0	7.96E+00	3.67E-04	88.6	8.6	0.41	27.6	-4.7	0.36	6.5	1.30	27.2	1440	1.6	70	5
47	F	MOGA2	1	#NAN	#NAN	74.8	9.3	0.30	23.4	-4.8	0.35	5.1	1.38	27.1	1429	1.6	76	5
48	F	MOGA2	1	#NAN	#NAN	124.5	9.7	0.40	17.4	-2.2	0.32	6.0	1.36	27.4	1391	1.6	122	4
49	F	MOGA2	1	#NAN	#NAN	72.0	8.4	0.44	30.0	-4.8	0.39	5.5	1.40	22.8	1431	1.6	117	6
50	F	MOGA2	0	9.69E+00	5.24E-04	96.9	9.2	0.42	30.6	-3.7	0.39	5.7	1.53	29.5	1476	1.6	87	5
51	F	MOGA2	0	8.25E+00	4.44E-04	88.6	8.7	0.41	28.5	-4.6	0.36	6.5	1.30	26.9	1444	1.6	74	6
52	F	MOGA2	0	1.10E+01	7.90E-04	119.0	8.2	0.33	24.3	-3.2	0.37	5.2	1.58	26.0	1380	1.6	104	5
53	F	MOGA2	0	9.99E+00	5.80E-04	116.2	8.1	0.41	32.7	-3.2	0.34	5.7	1.43	28.9	1390	1.6	93	6
54	F	MOGA2	0	1.08E+01	8.83E-04	105.1	8.9	0.40	30.6	-3.9	0.38	5.3	1.50	25.6	1452	1.6	105	5
55	F	MOGA2	0	1.15E+01	1.15E-03	107.9	9.3	0.40	21.3	-4.4	0.36	6.4	1.51	30.0	1480	1.6	113	4
56	F	MOGA2	0	1.06E+01	8.87E-04	110.7	8.1	0.31	29.1	-2.9	0.37	6.0	1.60	28.1	1415	1.6	104	6
57	F	MOGA2	1	#NAN	#NAN	102.4	7.7	0.35	26.1	-2.4	0.33	5.6	1.34	27.3	1451	1.6	121	4
58	F	MOGA2	1	#NAN	#NAN	116.2	8.7	0.34	30.9	-4.8	0.35	5.8	1.37	25.9	1440	1.6	114	4
59	F	MOGA2	0	1.27E+01	1.83E-03	119.0	9.4	0.45	25.2	-2.3	0.34	5.3	1.56	24.1	1474	1.6	130	6
60	F	MOGA2	#NAN	#NAN	#NAN	102.4	8.1	0.31	27.0	-3.6	0.33	6.4	1.51	28.8	1406	1.6	89	5
61	F	MOGA2	1	#NAN	#NAN	130.0	8.1	0.43	20.7	-2.5	0.33	5.9	1.28	29.4	1434	1.6	91	5
62	F	MOGA2	1	#NAN	#NAN	72.0	7.9	0.32	15.6	-4.7	0.35	6.3	1.34	22.0	1428	1.6	114	5
63	F	MOGA2	1	#NAN	#NAN	124.5	8.9	0.37	16.2	-4.3	0.33	6.4	1.46	27.2	1403	1.6	129	6

64	F	MOGA2	1	#NAN	#NAN	83.0	9.0	0.40	27.0	-2.2	0.36	5.0	1.29	24.3	1388	1.6	88	4
65	F	MOGA2	0	1.05E+01	3.72E-04	116.2	9.8	0.45	33.0	-3.7	0.36	6.4	1.51	22.6	1450	1.6	85	4
66	F	MOGA2	1	#NAN	#NAN	80.3	9.5	0.34	15.0	-4.0	0.39	5.5	1.38	26.3	1422	1.6	124	6
67	F	MOGA2	0	1.11E+01	1.51E-03	99.6	8.5	0.42	20.7	-4.1	0.38	5.0	1.43	25.2	1413	1.6	116	5
68	F	MOGA2	#NAN	#NAN	#NAN	74.8	9.1	0.30	20.4	-3.4	0.34	5.2	1.57	24.8	1455	1.6	101	4
69	F	MOGA2	#NAN	#NAN	#NAN	99.6	9.2	0.42	26.7	-3.1	0.36	5.3	1.59	26.9	1479	1.6	83	5
70	F	MOGA2	#NAN	#NAN	#NAN	96.9	8.6	0.41	27.6	-4.7	0.36	6.5	1.39	29.1	1476	1.6	87	5
71	F	MOGA2	#NAN	#NAN	#NAN	107.9	9.3	0.30	23.4	-4.8	0.35	6.1	1.33	27.1	1429	1.6	76	5
72	F	MOGA2	#NAN	#NAN	#NAN	124.5	8.1	0.40	17.4	-2.2	0.34	6.0	1.36	28.1	1389	1.6	122	4
73	F	MOGA2	#NAN	#NAN	#NAN	72.0	8.4	0.44	30.3	-4.8	0.39	5.5	1.41	22.8	1415	1.6	117	6
74	F	MOGA2	#NAN	#NAN	#NAN	96.9	9.2	0.43	29.1	-3.7	0.38	5.6	1.46	29.0	1468	1.6	85	5
75	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.7	0.32	15.0	-4.6	0.32	5.2	1.36	26.9	1444	1.6	74	6
76	F	MOGA2	#NAN	#NAN	#NAN	119.0	8.5	0.40	18.3	-3.8	0.39	5.9	1.48	26.0	1380	1.6	99	4
77	F	MOGA2	#NAN	#NAN	#NAN	116.2	9.7	0.42	32.7	-4.5	0.34	6.0	1.43	28.9	1390	1.6	93	6
78	F	MOGA2	#NAN	#NAN	#NAN	107.9	9.0	0.40	28.8	-4.0	0.37	5.5	1.51	25.6	1456	1.6	108	5
79	F	MOGA2	#NAN	#NAN	#NAN	102.4	9.0	0.36	22.2	-3.6	0.39	6.5	1.49	29.5	1473	1.6	112	5
80	F	MOGA2	#NAN	#NAN	#NAN	102.4	8.2	0.30	28.2	-2.6	0.39	6.0	1.54	27.7	1430	1.6	115	6
81	F	MOGA2	#NAN	#NAN	#NAN	102.4	7.7	0.36	26.1	-4.4	0.33	5.1	1.45	27.3	1450	1.6	111	4
82	F	MOGA2	#NAN	#NAN	#NAN	116.2	8.7	0.34	30.9	-3.8	0.35	5.8	1.37	26.6	1440	1.6	114	4
83	F	MOGA2	#NAN	#NAN	#NAN	107.9	9.5	0.41	26.1	-2.6	0.33	5.1	1.57	24.7	1468	1.6	130	6
84	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.5	0.32	22.5	-3.7	0.38	6.3	1.49	27.8	1468	1.6	112	5
85	F	MOGA2	#NAN	#NAN	#NAN	85.8	7.6	0.36	15.0	-4.6	0.35	5.6	1.37	30.0	1480	1.6	90	6
86	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.6	0.42	28.8	-4.5	0.36	6.3	1.28	26.5	1440	1.6	74	6
87	F	MOGA2	#NAN	#NAN	#NAN	91.3	8.4	0.40	18.6	-3.9	0.39	5.8	1.47	23.1	1395	1.6	98	4
88	F	MOGA2	#NAN	#NAN	#NAN	119.0	9.4	0.43	23.7	-2.7	0.35	6.3	1.50	26.8	1472	1.6	127	6
89	F	MOGA2	#NAN	#NAN	#NAN	96.9	7.8	0.39	16.8	-4.6	0.35	5.6	1.39	29.1	1476	1.6	87	5
90	F	MOGA2	#NAN	#NAN	#NAN	74.8	9.1	0.35	20.4	-3.4	0.34	5.2	1.58	26.4	1455	1.6	101	4
91	F	MOGA2	#NAN	#NAN	#NAN	99.6	9.2	0.42	26.7	-3.1	0.36	5.3	1.59	26.9	1380	1.6	83	5
92	F	MOGA2	#NAN	#NAN	#NAN	96.9	8.6	0.41	27.6	-4.7	0.36	6.5	1.39	29.2	1478	1.6	86	5
93	F	MOGA2	#NAN	#NAN	#NAN	107.9	9.3	0.31	23.4	-4.9	0.35	6.3	1.33	27.1	1442	1.6	76	5
94	F	MOGA2	#NAN	#NAN	#NAN	124.5	8.8	0.40	18.0	-2.3	0.39	6.0	1.36	28.4	1387	1.6	122	4
95	F	MOGA2	#NAN	#NAN	#NAN	77.5	8.4	0.44	30.3	-4.8	0.39	5.5	1.41	22.8	1414	1.6	117	6
96	F	MOGA2	#NAN	#NAN	#NAN	107.9	9.2	0.43	19.5	-3.7	0.38	5.6	1.46	29.0	1468	1.6	90	5
97	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.7	0.32	15.0	-4.6	0.32	5.2	1.46	24.3	1444	1.6	74	6
98	F	MOGA2	#NAN	#NAN	#NAN	119.0	8.5	0.40	18.3	-3.8	0.39	5.9	1.48	26.0	1380	1.6	99	4
99	F	MOGA2	#NAN	#NAN	#NAN	116.2	9.7	0.42	32.4	-4.9	0.34	5.9	1.43	28.9	1390	1.6	93	6
100	F	MOGA2	#NAN	#NAN	#NAN	107.9	9.0	0.40	28.8	-4.0	0.37	5.5	1.49	25.7	1456	1.6	108	5
101	F	MOGA2	#NAN	#NAN	#NAN	113.4	8.2	0.36	22.2	-3.6	0.39	6.5	1.49	29.2	1473	1.6	112	4
102	F	MOGA2	#NAN	#NAN	#NAN	102.4	8.2	0.30	28.2	-2.6	0.38	6.0	1.54	27.7	1397	1.6	110	6
103	F	MOGA2	#NAN	#NAN	#NAN	102.4	9.1	0.33	26.1	-4.4	0.33	5.1	1.45	28.2	1450	1.6	111	4
104	F	MOGA2	#NAN	#NAN	#NAN	77.5	8.7	0.34	30.9	-3.8	0.32	5.8	1.37	26.6	1432	1.6	114	4
105	F	MOGA2	#NAN	#NAN	#NAN	107.9	7.7	0.40	28.5	-2.6	0.33	5.1	1.34	24.7	1401	1.6	72	4
106	F	MOGA2	#NAN	#NAN	#NAN	110.7	8.5	0.32	32.1	-4.0	0.38	6.3	1.49	27.8	1459	1.6	112	5
107	F	MOGA2	#NAN	#NAN	#NAN	85.8	7.6	0.38	15.0	-4.6	0.35	5.6	1.37	30.0	1384	1.6	90	6
108	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.6	0.42	28.8	-4.5	0.36	6.3	1.40	26.5	1439	1.6	74	6
109	F	MOGA2	#NAN	#NAN	#NAN	91.3	8.4	0.40	18.6	-3.9	0.39	5.8	1.47	25.8	1395	1.6	98	4
110	F	MOGA2	#NAN	#NAN	#NAN	74.8	9.4	0.43	23.7	-2.7	0.35	6.1	1.56	27.1	1470	1.6	127	6
111	F	MOGA2	#NAN	#NAN	#NAN	74.8	7.8	0.39	17.1	-4.6	0.35	5.6	1.39	23.8	1476	1.6	87	5
112	F	MOGA2	#NAN	#NAN	#NAN	88.6	9.4	0.32	22.5	-2.7	0.40	6.3	1.49	27.8	1468	1.6	127	6
113	F	MOGA2	#NAN	#NAN	#NAN	91.3	7.8	0.39	16.8	-3.8	0.39	5.9	1.48	23.7	1476	1.6	87	5
114	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.7	0.42	28.5	-4.9	0.36	6.5	1.30	26.9	1442	1.6	74	6
115	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.5	0.42	27.6	-4.7	0.36	6.5	1.30	27.2	1440	1.6	70	5
116	F	MOGA2	#NAN	#NAN	#NAN	102.4	8.5	0.32	22.5	-2.7	0.38	6.1	1.50	29.4	1477	1.6	119	4
117	F	MOGA2	#NAN	#NAN	#NAN	113.4	9.4	0.43	22.8	-3.0	0.35	5.7	1.49	26.2	1473	1.6	123	6
118	F	MOGA2	#NAN	#NAN	#NAN	77.5	8.6	0.41	27.9	-4.7	0.36	5.0	1.30	27.2	1440	1.6	70	5
119	F	MOGA2	#NAN	#NAN	#NAN	124.5	9.6	0.45	24.3	-2.0	0.33	5.4	1.58	24.6	1480	1.6	100	6
120	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.5	0.32	22.5	-2.7	0.40	6.3	1.49	27.8	1468	1.6	112	5
121	F	MOGA2	#NAN	#NAN	#NAN	107.9	9.0	0.40	27.6	-4.0	0.39	5.3	1.50	25.7	1406	1.6	107	5
122	F	MOGA2	#NAN	#NAN	#NAN	113.4	8.2	0.36	22.2	-3.6	0.39	6.5	1.55	24.0	1473	1.6	112	4
123	F	MOGA2	#NAN	#NAN	#NAN	102.4	8.3	0.30	28.2	-2.1	0.32	5.0	1.54	27.7	1397	1.6	110	6
124	F	MOGA2	#NAN	#NAN	#NAN	102.4	9.1	0.33	26.1	-4.4	0.35	5.1	1.45	28.5	1458	1.6	111	4
125	F	MOGA2	#NAN	#NAN	#NAN	77.5	8.3	0.34	30.9	-3.8	0.32	5.8	1.36	26.6	1436	1.6	114	4
126	F	MOGA2	#NAN	#NAN	#NAN	107.9	8.1	0.40	28.5	-2.1	0.33	5.1	1.36	26.0	1401	1.6	72	4
127	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.5	0.32	32.1	-4.0	0.38	6.3	1.49	27.8	1461	1.6	112	5
128	F	MOGA2	#NAN	#NAN	#NAN	85.8	7.6	0.38	15.0	-4.6	0.35	5.6	1.37	22.2	1450	1.6	90	6
129	F	MOGA2	#NAN	#NAN	#NAN	88.6	7.9	0.44	28.8	-4.5	0.36	6.3	1.40	26.5	1439	1.6	74	6
130	F	MOGA2	#NAN	#NAN	#NAN	80.3	8.7	0.40	23.4	-4.9	0.39	5.8	1.47	23.0	1395	1.6	98	4
131	F	MOGA2	#NAN	#NAN	#NAN	74.8	9.2	0.43	24.3	-2.7	0.35	6.3	1.58	27.1	1405	1.6	127	6
132	F	MOGA2	#NAN	#NAN	#NAN	85.8	7.8	0.37	16.5	-4.6	0.35	5.6	1.39	23.8	1472	1.6	126	5
133	F	MOGA2	#NAN	#NAN	#NAN	77.5	9.4	0.32	22.5	-2.8	0.40							

138	F	MOGA2	#NAN	#NAN	#NAN	113.4	9.3	0.43	22.8	-3.0	0.35	5.7	1.52	26.2	1474	1.6	123	6
139	F	MOGA2	#NAN	#NAN	#NAN	77.5	8.6	0.41	25.5	-4.7	0.34	5.0	1.51	27.2	1440	1.6	72	5
140	F	MOGA2	#NAN	#NAN	#NAN	119.0	9.4	0.43	23.7	-2.7	0.35	5.4	1.55	25.6	1472	1.6	127	6
141	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.5	0.41	28.5	-4.6	0.36	6.5	1.30	26.9	1444	1.6	112	5
142	F	MOGA2	#NAN	#NAN	#NAN	80.3	7.9	0.39	16.8	-4.3	0.36	5.6	1.39	29.1	1476	1.6	89	5
143	F	MOGA2	#NAN	#NAN	#NAN	91.3	8.4	0.43	28.2	-5.0	0.37	6.5	1.28	28.0	1429	1.6	90	6
144	F	MOGA2	#NAN	#NAN	#NAN	94.1	8.5	0.40	18.3	-3.8	0.40	6.1	1.53	24.4	1398	1.6	95	4
145	F	MOGA2	#NAN	#NAN	#NAN	99.6	9.3	0.39	23.4	-4.1	0.38	6.2	1.51	28.8	1453	1.6	112	4
146	F	MOGA2	#NAN	#NAN	#NAN	119.0	9.3	0.38	23.1	-4.4	0.35	5.4	1.55	25.6	1472	1.6	119	4
147	F	MOGA2	#NAN	#NAN	#NAN	85.8	8.7	0.41	27.6	-4.0	0.37	6.4	1.40	26.9	1439	1.6	90	5
148	F	MOGA2	#NAN	#NAN	#NAN	116.2	9.4	0.44	25.5	-2.8	0.34	5.2	1.53	24.3	1478	1.6	130	6
149	F	MOGA2	#NAN	#NAN	#NAN	96.9	8.6	0.41	21.9	-4.0	0.39	5.1	1.42	25.1	1399	1.6	105	5
150	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.5	0.32	32.1	-4.0	0.38	6.3	1.49	27.8	1461	1.6	78	4
151	F	MOGA2	#NAN	#NAN	#NAN	85.8	7.6	0.38	15.0	-4.6	0.35	5.6	1.34	22.2	1449	1.6	89	6
152	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.2	0.44	28.8	-4.5	0.36	6.3	1.42	26.5	1439	1.6	84	6
153	F	MOGA2	#NAN	#NAN	#NAN	80.3	8.7	0.40	21.0	-4.9	0.39	5.8	1.47	23.0	1411	1.6	98	4
154	F	MOGA2	#NAN	#NAN	#NAN	74.8	9.4	0.45	24.3	-2.9	0.35	6.3	1.58	27.1	1470	1.6	127	6
155	F	MOGA2	#NAN	#NAN	#NAN	83.0	7.8	0.37	16.5	-4.6	0.35	5.6	1.60	23.8	1472	1.6	126	5
156	F	MOGA2	#NAN	#NAN	#NAN	77.5	9.4	0.32	22.5	-2.8	0.40	5.3	1.49	27.8	1470	1.6	127	6
157	F	MOGA2	#NAN	#NAN	#NAN	91.3	7.8	0.35	26.4	-3.8	0.39	5.6	1.37	29.6	1476	1.6	87	5
158	F	MOGA2	#NAN	#NAN	#NAN	88.6	9.0	0.42	15.0	-4.9	0.37	5.1	1.30	26.9	1425	1.6	74	6
159	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.5	0.42	27.6	-4.6	0.36	5.0	1.51	27.2	1432	1.6	70	5
160	F	MOGA2	#NAN	#NAN	#NAN	102.4	8.5	0.32	22.5	-2.7	0.38	6.2	1.32	29.4	1477	1.6	114	4
161	F	MOGA2	#NAN	#NAN	#NAN	113.4	9.3	0.32	22.8	-4.5	0.35	5.7	1.57	26.2	1474	1.6	128	6
162	F	MOGA2	#NAN	#NAN	#NAN	121.7	8.6	0.41	25.5	-4.7	0.34	5.0	1.30	27.2	1424	1.6	74	5
163	F	MOGA2	#NAN	#NAN	#NAN	74.8	9.4	0.43	23.7	-2.7	0.34	5.1	1.55	25.6	1471	1.6	127	6
164	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.8	0.41	29.1	-2.6	0.36	6.5	1.30	26.9	1444	1.6	72	5
165	F	MOGA2	#NAN	#NAN	#NAN	80.3	7.9	0.39	16.8	-4.3	0.36	5.6	1.39	29.1	1476	1.6	89	5
166	F	MOGA2	#NAN	#NAN	#NAN	91.3	8.4	0.40	33.0	-5.0	0.37	5.5	1.28	28.2	1395	1.6	90	6
167	F	MOGA2	#NAN	#NAN	#NAN	94.1	8.5	0.40	18.3	-4.9	0.34	6.1	1.53	24.4	1398	1.6	95	4
168	F	MOGA2	#NAN	#NAN	#NAN	99.6	9.6	0.39	23.4	-4.1	0.38	6.2	1.51	28.8	1392	1.6	112	4
169	F	MOGA2	#NAN	#NAN	#NAN	119.0	9.3	0.38	23.1	-4.4	0.35	5.3	1.57	25.6	1472	1.6	117	4
170	F	MOGA2	#NAN	#NAN	#NAN	85.8	8.7	0.41	28.8	-4.0	0.36	6.4	1.42	26.9	1430	1.6	129	5
171	F	MOGA2	0	1.35E+01	1.47E-03	116.2	9.4	0.44	27.9	-2.8	0.34	5.2	1.53	24.3	1478	1.6	130	4
172	F	MOGA2	0	1.06E+01	9.44E-04	96.9	8.6	0.31	17.1	-4.0	0.38	5.1	1.42	25.1	1473	1.6	106	5
173	F	MOGA2	1	#NAN	#NAN	96.9	7.8	0.39	16.8	-4.3	0.35	5.6	1.39	29.1	1476	1.6	130	6
174	F	MOGA2	0	8.95E+00	8.48E-04	88.6	8.6	0.41	28.5	-4.6	0.37	6.5	1.30	26.9	1444	1.6	93	6
175	F	MOGA2	1	#NAN	#NAN	88.6	8.4	0.39	20.7	-3.8	0.39	5.8	1.49	22.0	1414	1.6	106	4
176	F	MOGA2	0	1.18E+01	1.30E-03	102.4	9.7	0.38	23.1	-4.4	0.38	6.1	1.50	29.4	1477	1.6	116	4
177	F	MOGA2	1	#NAN	#NAN	88.6	8.5	0.41	27.6	-4.7	0.36	6.5	1.30	27.2	1408	1.6	99	4
178	F	MOGA2	0	1.27E+01	1.83E-03	119.0	9.4	0.45	25.2	-2.3	0.34	5.3	1.56	24.1	1474	1.6	130	6
179	F	MOGA2	0	1.11E+01	1.52E-03	99.6	8.5	0.41	28.5	-4.1	0.38	5.0	1.43	25.2	1413	1.6	116	5
180	F	MOGA2	0	1.04E+01	1.43E-03	88.6	8.5	0.32	22.5	-2.7	0.40	6.3	1.49	27.8	1468	1.6	112	5
181	F	MOGA2	1	#NAN	#NAN	83.0	7.8	0.37	16.5	-4.6	0.35	5.6	1.31	23.8	1451	1.6	126	5
182	F	MOGA2	1	#NAN	#NAN	77.5	9.4	0.32	22.5	-2.8	0.40	5.3	1.49	27.8	1470	1.6	127	6
183	F	MOGA2	1	#NAN	#NAN	72.0	7.9	0.35	25.8	-3.8	0.39	5.6	1.37	28.3	1411	1.6	87	5
184	F	MOGA2	0	8.42E+00	4.00E-04	83.0	8.7	0.42	15.0	-4.9	0.37	5.1	1.36	24.2	1392	1.6	74	6
185	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.6	0.42	27.6	-4.8	0.36	5.0	1.51	27.2	1432	1.6	70	5
186	F	MOGA2	0	8.63E+00	3.40E-04	102.4	7.7	0.32	22.5	-2.7	0.38	6.2	1.32	29.4	1477	1.6	74	4
187	F	MOGA2	0	1.19E+01	1.64E-03	113.4	9.3	0.32	22.8	-4.5	0.35	5.7	1.57	26.1	1474	1.6	123	6
188	F	MOGA2	1	#NAN	#NAN	121.7	7.9	0.41	25.5	-4.7	0.34	5.0	1.30	23.3	1423	1.6	114	5
189	F	MOGA2	#NAN	#NAN	#NAN	74.8	9.3	0.43	23.7	-2.9	0.34	5.1	1.55	25.6	1475	1.6	127	6
190	F	MOGA2	0	7.98E+00	4.00E-04	83.0	8.8	0.41	29.1	-2.6	0.37	6.5	1.30	27.0	1444	1.6	72	5
191	F	MOGA2	1	#NAN	#NAN	80.3	7.9	0.38	19.2	-4.3	0.36	5.6	1.39	29.1	1476	1.6	89	4
192	F	MOGA2	1	#NAN	#NAN	91.3	7.7	0.41	31.8	-5.0	0.37	6.5	1.28	28.2	1395	1.6	75	6
193	F	MOGA2	0	9.91E+00	7.01E-04	94.1	8.5	0.40	18.3	-4.9	0.34	6.1	1.52	27.0	1398	1.6	95	4
194	F	MOGA2	0	1.12E+01	1.21E-03	99.6	9.6	0.39	21.0	-4.1	0.38	6.2	1.51	28.8	1392	1.6	113	4
195	F	MOGA2	0	1.26E+01	1.23E-03	119.0	9.4	0.38	23.1	-4.4	0.35	5.3	1.57	25.6	1471	1.6	117	4
196	F	MOGA2	1	#NAN	#NAN	85.8	8.7	0.43	28.8	-4.0	0.36	6.4	1.42	26.9	1439	1.6	129	5
197	F	MOGA2	0	1.31E+01	1.52E-03	110.7	9.0	0.45	28.5	-2.5	0.34	5.4	1.52	24.7	1480	1.6	127	4
198	F	MOGA2	0	1.08E+01	1.44E-03	94.1	8.5	0.31	20.4	-4.5	0.37	5.2	1.40	24.9	1471	1.6	114	5
199	F	MOGA2	1	#NAN	#NAN	94.1	7.9	0.39	16.8	-4.3	0.35	5.6	1.39	27.9	1475	1.6	130	6
200	F	MOGA2	1	#NAN	#NAN	77.5	8.9	0.42	29.1	-4.9	0.37	6.2	1.30	27.3	1441	1.6	86	6
201	F	MOGA2	1	#NAN	#NAN	88.6	8.4	0.39	20.7	-3.8	0.39	5.8	1.29	22.0	1414	1.6	102	4
202	F	MOGA2	0	1.19E+01	1.46E-03	102.4	9.6	0.40	22.8	-4.4	0.38	6.3	1.53	28.0	1477	1.6	117	4
203	F	MOGA2	0	1.01E+01	7.76E-04	88.6	8.6	0.41	27.0	-4.7	0.36	5.0	1.30	27.2	1409	1.6	99	4
204	F	MOGA2	0	1.26E+01	1.85E-03	116.2	9.4	0.45	25.2	-2.3	0.34	5.3	1.56	24.3	1474	1.6	130	6
205	F	MOGA2	0	1.09E+01	1.37E-03	96.9	8.3	0.41	29.4	-3.2	0.39	5.0	1.42	25.4	1447	1.6	113	5
206	F	MOGA2	#NAN	#N														

212	F	MOGA2	#NAN	#NAN	#NAN	94.1	8.5	0.31	20.4	-4.5	0.35	5.7	1.57	24.7	1471	1.6	114	5
213	F	MOGA2	0	1.25E+01	1.70E-03	119.0	9.4	0.43	23.7	-2.7	0.35	5.4	1.55	25.6	1472	1.6	127	6
214	F	MOGA2	#NAN	#NAN	#NAN	74.8	9.1	0.43	23.7	-2.9	0.34	5.1	1.55	25.6	1475	1.6	127	6
215	F	MOGA2	#NAN	#NAN	#NAN	77.5	8.8	0.42	30.3	-2.2	0.37	6.5	1.40	26.6	1460	1.6	70	5
216	F	MOGA2	1	#NAN	#NAN	80.3	7.9	0.38	19.2	-4.3	0.36	5.3	1.39	29.1	1476	1.6	89	4
217	F	MOGA2	0	1.08E+01	1.44E-03	94.1	8.5	0.31	20.4	-4.5	0.37	5.2	1.40	24.9	1471	1.6	114	5
218	F	MOGA2	#NAN	#NAN	#NAN	94.1	9.0	0.45	28.5	-2.5	0.34	6.1	1.52	27.0	1480	1.6	127	4
219	F	MOGA2	0	1.15E+01	1.56E-03	96.9	9.3	0.40	21.6	-4.3	0.38	6.4	1.49	28.9	1413	1.6	117	4
220	F	MOGA2	0	#NAN	#NAN	119.0	9.4	0.39	24.0	-4.3	0.35	5.8	1.51	24.5	1480	1.6	102	4
221	F	MOGA2	1	#NAN	#NAN	85.8	8.7	0.43	27.9	-5.0	0.35	5.4	1.42	26.9	1439	1.6	129	5
222	F	MOGA2	0	8.31E+00	4.28E-04	88.6	8.7	0.30	28.5	-2.5	0.36	6.5	1.30	26.9	1444	1.6	74	6
223	F	MOGA2	0	1.05E+01	9.85E-04	94.1	8.3	0.34	21.6	-3.7	0.36	5.0	1.38	24.3	1461	1.6	106	5
224	F	MOGA2	0	1.15E+01	2.21E-03	99.6	7.9	0.39	16.8	-3.3	0.35	5.6	1.39	27.8	1467	1.6	130	6
225	F	MOGA2	1	#NAN	#NAN	77.5	8.2	0.42	29.1	-4.6	0.37	6.2	1.30	27.3	1441	1.6	86	4
226	F	MOGA2	1	#NAN	#NAN	88.6	8.4	0.39	20.7	-3.8	0.39	5.4	1.34	22.0	1414	1.6	102	4
227	F	MOGA2	0	1.04E+01	1.49E-03	96.9	8.3	0.40	22.8	-4.4	0.38	6.3	1.42	25.4	1447	1.6	113	5
228	F	MOGA2	1	#NAN	#NAN	88.6	8.6	0.41	30.6	-4.6	0.36	5.0	1.33	27.0	1398	1.6	99	4
229	F	MOGA2	0	1.11E+01	1.52E-03	99.6	8.5	0.45	25.2	-4.1	0.38	5.0	1.43	25.2	1413	1.6	116	5
230	F	MOGA2	1	#NAN	#NAN	88.6	8.3	0.41	29.4	-3.2	0.39	6.5	1.30	26.9	1447	1.6	113	5
231	F	MOGA2	0	9.44E+00	9.45E-04	88.6	8.5	0.37	24.3	-2.9	0.33	6.3	1.29	22.5	1468	1.6	97	5
232	F	MOGA2	0	8.31E+00	2.82E-04	94.1	8.3	0.41	27.3	-5.0	0.36	6.1	1.28	27.8	1441	1.6	70	6
233	F	MOGA2	0	1.27E+01	1.37E-03	127.2	9.5	0.44	23.4	-2.1	0.34	5.4	1.60	24.4	1475	1.6	122	6
234	F	MOGA2	#NAN	#NAN	#NAN	85.8	8.6	0.41	18.0	-4.7	0.36	6.5	1.42	22.3	1440	1.6	90	5
235	F	MOGA2	0	8.70E+00	3.31E-04	99.6	8.4	0.41	29.4	-4.8	0.37	6.5	1.28	27.3	1441	1.6	70	6
236	F	MOGA2	0	8.25E+00	4.44E-04	88.6	8.7	0.41	28.5	-4.6	0.36	6.5	1.30	26.9	1444	1.6	74	6
237	F	MOGA2	0	8.38E+00	6.25E-04	88.6	8.6	0.42	26.4	-4.7	0.36	6.5	1.28	27.3	1437	1.6	80	5
238	F	MOGA2	0	8.93E+00	7.85E-04	88.6	8.6	0.43	32.4	-4.6	0.38	6.5	1.28	26.9	1473	1.6	91	6
239	F	MOGA2	0	1.19E+01	2.06E-03	107.9	8.3	0.40	29.1	-4.2	0.37	5.0	1.43	25.7	1400	1.6	130	5
240	F	MOGA2	0	9.44E+00	9.45E-04	88.6	8.5	0.37	24.3	-2.9	0.33	6.3	1.29	22.5	1468	1.6	97	5
241	F	MOGA2	#NAN	#NAN	#NAN	77.5	8.8	0.42	30.3	-2.2	0.37	6.5	1.43	26.6	1460	1.6	70	5
242	F	MOGA2	1	#NAN	#NAN	80.3	7.9	0.36	19.2	-4.8	0.36	5.3	1.39	29.8	1476	1.6	89	4
243	F	MOGA2	0	1.11E+01	1.53E-03	99.6	8.3	0.31	25.2	-4.1	0.38	5.0	1.43	25.2	1413	1.6	116	5
244	F	MOGA2	1	#NAN	#NAN	96.9	9.0	0.45	28.5	-2.5	0.34	6.2	1.52	27.1	1480	1.6	127	4
245	F	MOGA2	0	1.15E+01	1.56E-03	96.9	9.3	0.40	21.6	-4.6	0.38	6.4	1.49	28.9	1413	1.6	117	4
246	F	MOGA2	0	1.12E+01	6.79E-04	119.0	9.4	0.39	22.8	-4.8	0.35	5.8	1.51	24.5	1380	1.6	104	4
247	F	MOGA2	1	#NAN	#NAN	85.8	8.7	0.43	29.1	-5.0	0.36	5.4	1.42	24.1	1438	1.6	129	5
248	F	MOGA2	0	8.75E+00	6.97E-04	88.6	8.6	0.30	26.1	-2.1	0.36	6.5	1.28	25.8	1443	1.6	84	6
249	F	MOGA2	0	#NAN	#NAN	105.1	8.3	0.34	21.6	-3.6	0.36	5.0	1.38	24.2	1461	1.6	106	5
250	F	MOGA2	#NAN	#NAN	#NAN	96.9	8.2	0.42	18.0	-3.3	0.34	5.5	1.39	29.0	1480	1.6	130	6
251	F	MOGA2	#NAN	#NAN	#NAN	77.5	9.6	0.42	29.1	-4.7	0.37	6.2	1.30	27.4	1441	1.6	86	4
252	F	MOGA2	1	#NAN	#NAN	88.6	8.4	0.40	30.3	-3.8	0.39	5.9	1.34	22.0	1414	1.6	102	4
253	F	MOGA2	0	1.04E+01	1.51E-03	96.9	8.3	0.40	22.8	-4.4	0.37	6.5	1.42	25.4	1447	1.6	113	5
254	F	MOGA2	0	8.85E+00	4.47E-04	88.6	7.9	0.41	21.0	-4.6	0.36	5.0	1.33	27.0	1398	1.6	79	4
255	F	MOGA2	0	1.08E+01	1.40E-03	96.9	8.4	0.44	24.6	-3.9	0.38	5.0	1.43	25.4	1404	1.6	113	5
256	V	MOGA2	0	1.02E+01	1.55E-03	88.6	8.3	0.41	29.4	-3.4	0.39	6.5	1.41	27.0	1447	1.6	113	5
257	F	MOGA2	0	9.44E+00	9.45E-04	88.6	8.5	0.36	24.3	-2.9	0.33	6.3	1.29	22.5	1468	1.6	97	5
258	F	MOGA2	0	8.11E+00	3.33E-04	88.6	8.3	0.41	27.3	-5.0	0.36	6.1	1.28	27.8	1468	1.6	70	6
259	F	MOGA2	0	1.29E+01	1.31E-03	127.2	9.5	0.44	23.4	-2.1	0.40	5.2	1.60	24.4	1475	1.6	122	6
260	F	MOGA2	0	9.27E+00	6.77E-04	85.8	7.9	0.41	19.2	-4.7	0.33	6.5	1.42	22.3	1421	1.6	90	4
261	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.4	0.41	29.4	-4.8	0.37	6.5	1.49	27.8	1441	1.6	70	6
262	F	MOGA2	0	8.68E+00	3.34E-04	91.3	8.7	0.42	28.5	-4.6	0.36	5.0	1.30	26.9	1444	1.6	74	6
263	F	MOGA2	0	8.47E+00	5.47E-04	91.3	8.7	0.42	27.0	-4.6	0.37	6.5	1.30	27.1	1435	1.6	79	5
264	F	MOGA2	0	8.93E+00	7.85E-04	88.6	8.6	0.43	32.4	-4.6	0.38	6.5	1.28	26.9	1473	1.6	91	6
265	F	MOGA2	1	#NAN	#NAN	105.1	7.9	0.39	16.8	-3.3	0.35	5.6	1.39	27.8	1400	1.6	130	6
266	F	MOGA2	1	#NAN	#NAN	85.8	8.5	0.34	26.4	-2.1	0.40	6.3	1.38	27.9	1470	1.6	106	5
267	V	MOGA2	0	9.03E+00	9.47E-04	88.6	8.5	0.43	28.2	-5.0	0.38	6.5	1.32	26.9	1438	1.6	95	6
268	F	MOGA2	0	1.11E+01	1.51E-03	99.6	8.5	0.39	16.8	-3.3	0.35	5.0	1.43	25.2	1413	1.6	116	5
269	F	MOGA2	0	8.36E+00	3.05E-04	94.1	8.8	0.41	29.1	-2.6	0.37	6.5	1.30	27.0	1444	1.6	72	5
270	F	MOGA2	1	#NAN	#NAN	85.8	8.7	0.43	19.5	-4.9	0.33	5.4	1.42	24.1	1430	1.6	115	5
271	F	MOGA2	1	#NAN	#NAN	88.6	8.6	0.30	26.1	-2.1	0.36	6.5	1.28	25.8	1476	1.6	130	6
272	F	MOGA2	0	1.19E+01	1.85E-03	105.1	8.3	0.34	21.6	-3.6	0.36	5.0	1.37	24.2	1461	1.6	126	5
273	F	MOGA2	1	#NAN	#NAN	96.9	8.2	0.42	18.0	-3.3	0.34	5.9	1.39	29.0	1384	1.6	130	6
274	F	MOGA2	1	#NAN	#NAN	77.5	9.3	0.43	29.1	-4.7	0.37	6.2	1.30	27.4	1441	1.6	126	4
275	F	MOGA2	1	#NAN	#NAN	77.5	8.4	0.35	20.7	-3.9	0.39	6.4	1.34	22.0	1414	1.6	102	4
276	F	MOGA2	0	8.91E+00	7.88E-04	88.6	8.6	0.40	22.8	-4.4	0.37	6.5	1.28	26.9	1473	1.6	91	6
277	F	MOGA2	0	1.02E+01	1.55E-03	88.6	8.3	0.41	30.6	-3.4	0.39	6.5	1.41	27.0	1447	1.6	113	5
278	F	MOGA2	0	1.05E+01	1.46E-03	96.9	8.1	0.43	28.2	-3.8	0.38	5.7	1.40	26.1	1440	1.6	113	

286	F	MOGA2	#NAN	#NAN	#NAN	91.3	8.7	0.41	30.9	-4.8	0.36	6.5	1.30	27.4	1429	1.6	83	5
287	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.6	0.43	32.4	-4.6	0.38	6.5	1.41	26.9	1473	1.6	91	6
288	F	MOGA2	#NAN	#NAN	#NAN	105.1	9.3	0.39	26.4	-3.3	0.36	5.6	1.39	27.8	1400	1.6	70	6
289	F	MOGA2	#NAN	#NAN	#NAN	85.8	8.5	0.34	26.4	-2.1	0.40	6.3	1.37	28.0	1470	1.6	106	5
290	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.5	0.43	28.2	-5.0	0.38	6.5	1.32	26.9	1468	1.6	95	6
291	F	MOGA2	#NAN	#NAN	#NAN	99.6	8.5	0.38	15.0	-3.1	0.34	5.2	1.35	24.6	1424	1.6	115	5
292	F	MOGA2	#NAN	#NAN	#NAN	91.3	8.7	0.42	27.0	-4.6	0.37	6.5	1.30	27.1	1435	1.6	79	5
293	F	MOGA2	#NAN	#NAN	#NAN	85.8	8.5	0.41	28.2	-5.0	0.36	6.5	1.30	26.9	1444	1.6	76	6
294	V	MOGA2	0	8.88E+00	8.65E-04	88.6	8.6	0.41	28.5	-4.6	0.34	6.5	1.30	26.9	1411	1.6	93	6
295	F	MOGA2	0	7.98E+00	3.99E-04	83.0	8.9	0.40	29.4	-2.6	0.37	6.5	1.30	27.0	1442	1.6	72	5
296	F	MOGA2	0	8.09E+00	3.33E-04	85.8	8.3	0.38	25.8	-2.7	0.36	5.9	1.31	27.5	1462	1.6	70	5
297	V	MOGA2	0	1.14E+01	2.24E-03	99.6	7.9	0.41	19.2	-4.7	0.33	5.6	1.39	27.8	1467	1.6	130	6
298	F	MOGA2	0	8.30E+00	4.00E-04	88.6	8.7	0.42	30.3	-4.4	0.37	6.1	1.28	27.2	1423	1.6	76	5
299	F	MOGA2	0	8.92E+00	7.88E-04	88.6	8.6	0.41	28.5	-4.6	0.36	6.5	1.30	26.9	1472	1.6	91	6
300	V	MOGA2	0	1.03E+01	1.59E-03	88.6	8.3	0.40	29.7	-3.4	0.39	6.5	1.41	27.0	1444	1.6	114	5
301	F	MOGA2	0	1.02E+01	1.55E-03	88.6	8.3	0.43	28.2	-3.4	0.39	6.5	1.41	27.0	1447	1.6	113	5
302	V	MOGA2	0	1.01E+01	1.26E-03	88.6	8.1	0.42	29.7	-2.9	0.38	6.5	1.41	28.1	1452	1.6	112	5
303	F	MOGA2	0	8.97E+00	7.10E-04	88.6	8.8	0.41	29.1	-2.6	0.34	6.3	1.28	23.0	1470	1.6	88	5
304	V	MOGA2	0	8.47E+00	6.82E-04	88.6	8.3	0.42	27.3	-4.9	0.34	6.4	1.28	27.8	1468	1.6	81	6
305	F	MOGA2	0	1.35E+01	1.11E-03	127.2	9.6	0.44	23.4	-2.1	0.39	5.2	1.60	24.4	1475	1.6	123	4
306	F	MOGA2	#NAN	#NAN	#NAN	85.8	7.7	0.31	15.3	-5.0	0.33	6.5	1.44	22.0	1421	1.6	81	4
307	F	MOGA2	0	1.01E+01	1.19E-03	91.3	8.8	0.41	29.4	-4.8	0.37	6.0	1.49	27.5	1440	1.6	109	6
308	F	MOGA2	0	8.97E+00	3.08E-04	96.9	8.9	0.42	29.7	-4.6	0.37	5.2	1.33	25.8	1448	1.6	72	6
309	F	MOGA2	0	8.66E+00	6.68E-04	91.3	8.7	0.44	30.9	-4.8	0.36	6.5	1.30	27.4	1429	1.6	83	5
310	F	MOGA2	0	9.39E+00	6.47E-04	91.3	8.6	0.42	32.7	-4.6	0.38	5.0	1.41	26.9	1473	1.6	90	6
311	F	MOGA2	0	1.05E+01	1.09E-03	105.1	9.3	0.40	25.8	-3.3	0.36	5.6	1.39	27.9	1400	1.6	109	6
312	F	MOGA2	0	8.94E+00	6.83E-04	85.8	8.5	0.34	26.4	-2.6	0.32	6.3	1.37	22.6	1470	1.6	86	5
313	F	MOGA2	0	8.49E+00	3.41E-04	88.6	8.5	0.43	28.8	-5.0	0.38	6.5	1.32	26.9	1463	1.6	75	4
314	F	MOGA2	0	1.17E+01	1.90E-03	99.6	8.6	0.31	15.0	-3.6	0.34	5.2	1.46	24.6	1428	1.6	125	5
315	F	MOGA2	0	9.17E+00	6.60E-04	96.9	8.6	0.42	27.0	-4.6	0.34	5.5	1.30	26.4	1435	1.6	89	5
316	F	MOGA2	0	8.44E+00	4.04E-04	85.8	8.5	0.41	27.0	-5.0	0.36	5.0	1.30	26.9	1444	1.6	76	6
317	F	MOGA2	0	8.04E+00	4.98E-04	83.0	8.6	0.41	26.1	-4.7	0.39	6.5	1.30	26.9	1411	1.6	74	6
318	F	MOGA2	1	#NAN	#NAN	83.0	8.3	0.41	30.6	-3.4	0.39	6.5	1.30	27.0	1447	1.6	113	5
319	F	MOGA2	0	7.80E+00	4.04E-04	80.3	8.4	0.39	25.5	-3.1	0.37	6.2	1.32	27.4	1459	1.6	70	5
320	F	MOGA2	0	1.01E+01	1.08E-03	99.6	7.8	0.41	17.1	-4.6	0.32	5.5	1.38	27.9	1478	1.6	106	6
321	F	MOGA2	0	8.30E+00	4.01E-04	88.6	8.7	0.42	30.3	-4.5	0.37	6.1	1.28	27.2	1423	1.6	76	5
322	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.6	0.41	28.5	-4.9	0.36	6.5	1.54	26.9	1472	1.6	91	6
323	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.3	0.41	30.6	-3.4	0.33	6.5	1.30	26.9	1447	1.6	113	5
324	F	MOGA2	#NAN	#NAN	#NAN	72.0	8.8	0.41	19.5	-2.6	0.34	6.5	1.30	26.9	1444	1.6	72	5
325	F	MOGA2	0	8.95E+00	6.80E-04	91.3	8.7	0.36	23.4	-3.5	0.37	6.5	1.33	27.2	1470	1.6	86	5
326	V	MOGA2	0	1.02E+01	1.55E-03	88.6	8.3	0.41	29.4	-3.4	0.39	6.5	1.41	27.0	1447	1.6	113	5
327	F	MOGA2	0	9.24E+00	5.33E-04	88.6	7.9	0.32	26.1	-2.1	0.36	5.0	1.50	26.5	1442	1.6	84	6
328	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.4	0.37	24.9	-2.8	0.37	6.5	1.41	27.0	1466	1.6	70	5
329	F	MOGA2	0	8.92E+00	7.86E-04	88.6	8.6	0.43	28.5	-5.0	0.38	6.5	1.33	26.9	1440	1.6	91	6
330	F	MOGA2	0	1.24E+01	9.50E-04	130.0	9.5	0.44	26.4	-2.0	0.39	5.5	1.60	25.0	1480	1.6	114	5
331	F	MOGA2	0	9.00E+00	5.38E-04	91.3	7.7	0.33	24.9	-5.0	0.32	6.0	1.39	22.0	1421	1.6	81	4
332	V	MOGA2	0	9.82E+00	9.83E-04	94.1	8.8	0.41	29.4	-4.8	0.37	6.0	1.51	27.8	1440	1.6	101	6
333	F	MOGA2	0	8.63E+00	3.45E-04	96.9	8.6	0.41	26.1	-4.7	0.39	6.5	1.30	25.8	1411	1.6	74	6
334	F	MOGA2	0	8.65E+00	6.70E-04	91.3	8.7	0.44	30.9	-4.8	0.36	6.5	1.28	27.3	1429	1.6	83	5
335	F	MOGA2	0	8.93E+00	6.14E-04	96.9	8.7	0.43	28.5	-4.7	0.34	6.2	1.34	26.9	1415	1.6	84	5
336	F	MOGA2	0	9.04E+00	2.26E-04	105.1	8.7	0.44	30.9	-3.3	0.36	5.6	1.39	27.9	1400	1.6	70	5
337	F	MOGA2	0	8.97E+00	6.77E-04	85.8	8.5	0.34	26.4	-2.6	0.33	6.3	1.38	22.6	1471	1.6	86	5
338	F	MOGA2	0	8.94E+00	4.74E-04	85.8	8.5	0.44	26.1	-3.6	0.38	6.0	1.33	26.7	1461	1.6	80	4
339	F	MOGA2	0	1.15E+01	1.88E-03	99.6	8.5	0.30	15.0	-3.8	0.34	5.3	1.49	25.1	1426	1.6	124	5
340	F	MOGA2	0	9.20E+00	6.51E-04	96.9	8.6	0.42	27.0	-4.6	0.36	5.5	1.30	26.4	1435	1.6	89	5
341	F	MOGA2	0	1.00E+01	1.22E-03	91.3	8.5	0.41	27.0	-5.0	0.36	5.0	1.30	29.5	1440	1.6	109	6
342	F	MOGA2	0	8.15E+00	5.76E-04	83.0	8.6	0.41	25.8	-4.9	0.40	6.5	1.33	26.3	1396	1.6	78	6
343	F	MOGA2	0	8.04E+00	4.98E-04	83.0	8.6	0.41	26.1	-4.7	0.39	6.5	1.30	26.9	1411	1.6	74	6
344	V	MOGA2	0	7.89E+00	5.06E-04	80.3	8.8	0.39	25.5	-3.1	0.37	6.2	1.32	27.4	1392	1.6	75	5
345	F	MOGA2	0	1.00E+01	9.72E-04	105.1	7.6	0.41	19.2	-4.8	0.32	5.9	1.37	27.6	1478	1.6	102	6
346	F	MOGA2	0	8.40E+00	3.78E-04	85.8	8.7	0.42	30.3	-4.5	0.32	6.3	1.37	22.6	1470	1.6	76	5
347	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.5	0.41	28.5	-5.0	0.36	6.5	1.54	24.3	1472	1.6	91	6
348	F	MOGA2	1	#NAN	#NAN	88.6	8.3	0.41	30.6	-3.4	0.33	6.5	1.30	26.9	1455	1.6	113	5
349	F	MOGA2	1	#NAN	#NAN	72.0	8.8	0.42	19.5	-2.8	0.34	5.1	1.30	24.3	1444	1.6	72	5
350	V	MOGA2	0	8.88E+00	8.65E-04	88.6	8.6	0.41	28.5	-4.6	0.34	6.5	1.30	26.9	1411	1.6	93	6
351	F	MOGA2	1	#NAN	#NAN	88.6	9.5	0.41	29.4	-3.4	0.34	6.5	1.41	27.0	1447	1.6	113	4
352	F	MOGA2	0	9.32E+00	5.11E-04													

360	F	MOGA2	0	8.77E+00	5.22E-04	85.8	8.5	0.44	26.1	-4.6	0.34	6.5	1.33	26.7	1461	1.6	80	4
361	F	MOGA2	0	8.92E+00	8.51E-04	88.6	8.6	0.41	15.3	-3.8	0.34	6.5	1.30	26.9	1411	1.6	93	6
362	F	MOGA2	0	9.11E+00	7.21E-04	96.9	7.9	0.41	27.0	-4.6	0.36	5.5	1.31	26.4	1435	1.6	89	5
363	F	MOGA2	0	9.22E+00	9.04E-04	85.8	8.5	0.42	27.3	-5.0	0.36	5.0	1.30	28.3	1434	1.6	96	6
364	F	MOGA2	0	8.53E+00	7.57E-04	83.0	8.6	0.41	25.8	-4.9	0.40	6.5	1.33	26.3	1396	1.6	84	6
365	F	MOGA2	1	#NAN	#NAN	83.0	8.6	0.41	28.5	-4.7	0.38	6.5	1.32	26.9	1411	1.6	113	6
366	V	MOGA2	0	8.02E+00	6.07E-04	74.8	8.7	0.38	24.9	-3.6	0.38	6.3	1.35	27.5	1406	1.6	78	5
367	F	MOGA2	0	1.00E+01	9.72E-04	105.1	7.6	0.41	19.2	-4.8	0.32	5.9	1.37	27.6	1478	1.6	102	6
368	F	MOGA2	#NAN	#NAN	#NAN	85.8	8.7	0.43	29.7	-4.6	0.34	6.3	1.43	22.6	1480	1.6	88	5
369	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.5	0.41	28.5	-4.4	0.36	6.1	1.54	24.3	1472	1.6	91	6
370	F	MOGA2	1	#NAN	#NAN	72.0	8.3	0.41	21.0	-3.4	0.33	6.5	1.30	26.9	1455	1.6	113	5
371	F	MOGA2	1	#NAN	#NAN	72.0	8.0	0.42	19.5	-2.8	0.34	5.1	1.30	24.3	1444	1.6	72	5
372	V	MOGA2	0	8.53E+00	8.23E-04	83.0	8.5	0.44	28.2	-5.0	0.33	6.4	1.31	26.5	1439	1.6	89	6
373	F	MOGA2	0	8.24E+00	3.66E-04	88.6	9.7	0.41	29.7	-3.4	0.34	6.5	1.30	27.0	1464	1.6	73	4
374	V	MOGA2	0	1.00E+01	1.22E-03	91.3	8.5	0.32	26.1	-5.0	0.36	5.0	1.30	29.5	1440	1.6	109	6
375	F	MOGA2	0	7.80E+00	4.04E-04	77.5	8.7	0.37	25.5	-2.8	0.37	5.9	1.30	27.5	1473	1.6	70	5
376	F	MOGA2	0	1.01E+01	1.26E-03	96.9	7.7	0.43	19.8	-4.6	0.32	5.8	1.38	27.9	1475	1.6	111	6
377	F	MOGA2	0	8.89E+00	4.27E-04	91.3	8.6	0.42	26.4	-4.7	0.36	6.5	1.44	27.3	1437	1.6	79	4
378	F	MOGA2	0	8.80E+00	6.86E-04	91.3	8.6	0.39	25.5	-3.1	0.38	6.5	1.30	27.4	1429	1.6	84	6
379	F	MOGA2	0	8.85E+00	7.82E-04	91.3	8.4	0.40	24.6	-2.9	0.36	6.5	1.31	27.4	1436	1.6	89	5
380	F	MOGA2	1	#NAN	#NAN	85.8	8.0	0.41	26.7	-2.7	0.34	6.4	1.30	26.5	1393	1.6	96	6
381	F	MOGA2	0	8.78E+00	5.98E-04	88.6	8.3	0.42	27.3	-4.9	0.34	5.6	1.39	27.8	1468	1.6	81	6
382	V	MOGA2	0	8.36E+00	6.31E-04	88.6	8.6	0.42	26.4	-4.6	0.36	6.5	1.29	27.3	1405	1.6	80	5
383	F	MOGA2	0	8.85E+00	7.47E-04	88.6	8.5	0.31	27.3	-2.0	0.35	6.5	1.28	25.0	1452	1.6	87	6
384	V	MOGA2	0	1.14E+01	2.24E-03	99.6	7.9	0.41	19.2	-4.7	0.33	5.6	1.39	27.8	1467	1.6	130	6
385	F	MOGA2	1	#NAN	#NAN	88.6	8.5	0.30	24.6	-5.0	0.38	6.5	1.32	26.9	1438	1.6	124	5
386	F	MOGA2	0	1.16E+01	2.17E-03	99.6	7.9	0.41	19.2	-4.7	0.34	5.3	1.49	25.1	1426	1.6	130	6
387	F	MOGA2	1	#NAN	#NAN	88.6	8.3	0.40	20.1	-3.4	0.39	6.5	1.41	27.0	1444	1.6	115	5
388	F	MOGA2	0	1.01E+01	1.25E-03	88.6	8.1	0.42	29.7	-2.9	0.38	6.5	1.41	27.0	1452	1.6	112	5
389	F	MOGA2	0	8.36E+00	5.75E-04	88.6	8.3	0.42	26.7	-5.0	0.34	6.4	1.28	27.7	1472	1.6	78	6
390	F	MOGA2	#NAN	#NAN	#NAN	72.0	8.5	0.41	28.2	-4.4	0.36	6.1	1.54	24.3	1472	1.6	91	6
391	V	MOGA2	0	8.53E+00	8.23E-04	83.0	8.5	0.44	28.2	-5.0	0.33	6.4	1.31	26.5	1439	1.6	89	6
392	F	MOGA2	1	#NAN	#NAN	72.0	8.0	0.42	19.5	-2.8	0.34	5.1	1.30	24.3	1442	1.6	72	5
393	F	MOGA2	1	#NAN	#NAN	83.0	8.5	0.44	28.2	-5.0	0.33	6.5	1.36	26.5	1439	1.6	128	6
394	F	MOGA2	0	8.78E+00	3.49E-04	91.3	9.7	0.37	30.3	-4.4	0.34	6.5	1.30	28.0	1457	1.6	77	4
395	V	MOGA2	0	1.01E+01	1.26E-03	88.6	8.1	0.42	29.7	-2.9	0.38	6.5	1.41	28.1	1452	1.6	112	5
396	V	MOGA2	0	7.67E+00	4.38E-04	77.5	8.6	0.37	27.3	-3.2	0.35	6.2	1.29	27.9	1469	1.6	70	5
397	F	MOGA2	0	9.73E+00	8.37E-04	99.6	8.0	0.44	19.5	-4.7	0.34	5.8	1.41	27.7	1480	1.6	97	6
398	F	MOGA2	0	8.59E+00	5.17E-04	91.3	8.6	0.42	26.4	-4.7	0.36	6.5	1.44	27.3	1403	1.6	79	5
399	F	MOGA2	0	8.84E+00	6.73E-04	88.6	8.6	0.39	25.5	-3.1	0.38	6.5	1.41	27.0	1429	1.6	84	6
400	F	MOGA2	1	#NAN	#NAN	80.3	7.7	0.40	24.6	-2.9	0.36	6.5	1.31	27.4	1435	1.6	89	4
401	F	MOGA2	1	#NAN	#NAN	85.8	8.0	0.32	25.5	-4.6	0.34	6.4	1.29	26.5	1393	1.6	96	6
402	F	MOGA2	0	8.39E+00	2.96E-04	88.6	8.7	0.37	25.5	-2.8	0.37	5.9	1.39	27.8	1468	1.6	72	5
403	F	MOGA2	0	8.40E+00	6.19E-04	88.6	8.6	0.42	26.4	-4.6	0.36	6.5	1.35	27.3	1402	1.6	80	5
404	F	MOGA2	1	#NAN	#NAN	91.3	8.4	0.35	26.7	-2.0	0.35	6.5	1.30	25.4	1442	1.6	103	6
405	F	MOGA2	0	1.15E+01	2.21E-03	99.6	7.9	0.41	19.2	-4.7	0.33	5.2	1.39	28.5	1467	1.6	130	6
406	F	MOGA2	1	#NAN	#NAN	88.6	8.5	0.30	24.9	-5.0	0.38	5.0	1.32	25.5	1429	1.6	126	5
407	F	MOGA2	1	#NAN	#NAN	96.9	7.7	0.41	20.7	-4.6	0.34	5.0	1.45	25.5	1423	1.6	130	6
408	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.3	0.40	20.1	-3.4	0.39	6.5	1.41	27.0	1444	1.6	115	5
409	F	MOGA2	0	8.96E+00	7.54E-04	91.3	8.1	0.42	29.7	-2.9	0.38	6.5	1.41	27.3	1436	1.6	89	5
410	F	MOGA2	0	#NAN	#NAN	88.6	8.3	0.42	26.7	-5.0	0.34	6.4	1.28	27.7	1472	1.6	78	6

Appendix E – Optimization results

Fixed network/Optimum aircraft case (10 airports)

d#	PAR	CAT	NO PASS	NDOC	NP	wS	wAR	wTR	wSweep	wTwist	Kink	BPR	eDiam	OPR	eTIT	FPR	Npax	nSeat
9	F	ULH	1	#NAN	#NAN	124.5	8.9	0.37	16.2	-4.3	0.33	6.4	1.46	23.9	1403	1.6	130	6
10	F	ULH	1	#NAN	#NAN	83.0	9.0	0.35	27.3	-2.2	0.36	5.2	1.35	24.5	1386	1.6	123	4
11	F	ULH	0	9.60E+00	1.75E-05	105.1	9.5	0.44	32.1	-3.7	0.34	6.2	1.42	22.5	1462	1.6	90	4
12	F	ULH	1	#NAN	#NAN	127.2	9.7	0.31	24.6	-3.5	0.40	5.4	1.32	28.5	1413	1.6	101	6
13	F	ULH	#NAN	#NAN	#NAN	77.5	7.9	0.37	15.9	-2.1	0.35	6.2	1.47	26.6	1440	1.6	103	6
14	F	ULH	0	1.01E+01	4.23E-05	121.7	8.0	0.33	31.8	-3.1	0.37	5.3	1.44	29.8	1447	1.6	97	5
15	F	ULH	0	1.05E+01	7.32E-05	110.7	7.7	0.45	18.9	-5.0	0.36	5.3	1.56	28.0	1388	1.6	107	4
16	F	ULH	0	9.84E+00	1.70E-04	88.6	8.5	0.32	22.5	-2.7	0.40	6.3	1.49	27.8	1468	1.6	112	5
17	F	ULH	#NAN	#NAN	#NAN	107.9	9.0	0.36	22.2	-2.6	0.38	5.9	1.52	23.3	1464	1.6	78	5
18	F	ULH	#NAN	#NAN	#NAN	80.3	9.6	0.36	27.0	-3.6	0.33	6.4	1.54	28.8	1410	1.6	89	5
19	F	ULH	#NAN	#NAN	#NAN	130.0	8.1	0.43	20.7	-2.5	0.39	5.8	1.28	24.2	1434	1.6	76	5
20	F	ULH	1	#NAN	#NAN	94.1	7.8	0.32	25.2	-4.7	0.35	6.3	1.34	22.0	1419	1.6	114	4
21	F	ULH	1	#NAN	#NAN	124.5	8.9	0.37	16.2	-4.3	0.33	6.4	1.46	23.9	1403	1.6	130	6
22	F	ULH	1	#NAN	#NAN	83.0	9.0	0.35	27.3	-2.2	0.36	5.2	1.35	24.5	1386	1.6	123	4
23	F	ULH	0	9.60E+00	1.75E-05	105.1	9.5	0.44	32.1	-3.7	0.34	6.2	1.42	22.5	1462	1.6	90	4
24	F	ULH	1	#NAN	#NAN	80.3	9.4	0.39	15.0	-4.0	0.38	5.5	1.32	26.3	1422	1.6	124	6
25	F	ULH	0	8.60E+00	-4.99E-05	99.6	8.7	0.42	21.0	-4.2	0.37	5.0	1.43	25.2	1429	1.6	70	5
26	F	ULH	#NAN	#NAN	#NAN	74.8	9.1	0.33	20.4	-3.3	0.34	5.2	1.57	24.8	1455	1.6	81	4
27	F	ULH	0	8.79E+00	5.09E-05	96.9	7.8	0.39	16.8	-4.3	0.35	5.6	1.39	29.1	1476	1.6	87	5
28	F	ULH	0	7.81E+00	3.05E-05	88.6	8.7	0.41	28.5	-4.6	0.36	6.5	1.30	26.9	1444	1.6	74	6
29	F	ULH	0	8.26E+00	1.36E-05	85.8	9.2	0.30	19.5	-4.6	0.34	5.1	1.38	25.1	1425	1.6	76	5
30	F	ULH	0	9.71E+00	-3.74E-05	124.5	9.7	0.40	17.4	-2.1	0.32	6.0	1.36	27.4	1391	1.6	83	4
31	F	MOGA2	1	#NAN	#NAN	72.0	8.6	0.44	30.0	-2.9	0.39	5.5	1.40	22.8	1431	1.6	117	6
32	F	MOGA2	0	9.87E+00	1.17E-04	96.9	9.2	0.42	30.6	-3.7	0.39	5.7	1.53	28.2	1401	1.6	105	5
33	F	MOGA2	0	9.77E+00	8.49E-05	91.3	8.5	0.40	18.3	-3.8	0.39	5.9	1.48	23.7	1400	1.6	99	4
34	F	MOGA2	#NAN	#NAN	#NAN	119.0	8.2	0.34	24.3	-3.2	0.37	6.1	1.58	26.0	1380	1.6	94	5
35	F	MOGA2	1	#NAN	#NAN	74.8	8.3	0.41	32.7	-3.2	0.34	5.7	1.43	29.6	1394	1.6	93	6
36	F	MOGA2	0	1.05E+01	8.51E-05	113.4	8.4	0.38	27.9	-4.1	0.32	5.1	1.50	23.4	1457	1.6	108	6
37	F	MOGA2	0	1.11E+01	1.32E-04	102.4	9.3	0.38	23.1	-4.4	0.38	6.1	1.50	29.4	1477	1.6	119	4
38	F	MOGA2	#NAN	#NAN	#NAN	110.7	8.1	0.31	29.1	-2.9	0.37	6.0	1.60	22.8	1415	1.6	84	6
39	F	MOGA2	1	#NAN	#NAN	102.4	7.7	0.35	26.1	-2.3	0.33	5.6	1.29	27.3	1450	1.6	121	4
40	F	MOGA2	1	#NAN	#NAN	116.2	8.8	0.34	30.9	-4.9	0.36	5.8	1.37	25.9	1440	1.6	112	4
41	F	MOGA2	0	1.17E+01	1.51E-04	119.0	9.4	0.43	23.7	-2.7	0.35	5.4	1.55	25.6	1472	1.6	127	6
42	F	MOGA2	1	#NAN	#NAN	127.2	9.7	0.30	24.6	-3.5	0.40	5.4	1.31	28.2	1412	1.6	100	6
43	F	MOGA2	#NAN	#NAN	#NAN	77.5	7.9	0.37	15.3	-2.1	0.35	6.1	1.47	26.0	1440	1.6	102	6
44	F	MOGA2	0	9.84E+00	3.79E-05	119.0	7.7	0.33	31.8	-3.4	0.37	5.4	1.46	30.0	1441	1.6	95	5
45	F	MOGA2	0	1.06E+01	6.81E-05	110.7	7.7	0.45	28.5	-4.5	0.36	5.1	1.56	28.0	1420	1.6	107	4
46	F	MOGA2	0	9.33E+00	6.72E-05	88.6	8.5	0.32	22.5	-2.7	0.40	6.3	1.49	27.8	1468	1.6	93	4
47	F	MOGA2	#NAN	#NAN	#NAN	91.3	9.0	0.36	22.2	-2.6	0.38	5.9	1.52	23.3	1464	1.6	78	5
48	F	MOGA2	#NAN	#NAN	#NAN	102.4	8.1	0.31	27.0	-3.6	0.33	6.4	1.54	28.8	1406	1.6	89	5
49	F	MOGA2	1	#NAN	#NAN	130.0	8.1	0.43	20.7	-2.5	0.33	5.8	1.28	24.2	1434	1.6	91	5
50	F	MOGA2	1	#NAN	#NAN	94.1	7.8	0.32	15.6	-4.7	0.35	6.3	1.34	22.0	1419	1.6	114	5
51	F	MOGA2	1	#NAN	#NAN	124.5	8.9	0.37	16.2	-4.3	0.33	6.4	1.46	27.2	1403	1.6	130	6
52	F	MOGA2	1	#NAN	#NAN	83.0	9.0	0.40	27.0	-2.2	0.36	5.0	1.29	24.5	1388	1.6	123	4
53	F	MOGA2	#NAN	#NAN	#NAN	102.4	9.0	0.45	33.0	-4.3	0.36	6.1	1.37	25.9	1442	1.6	84	5
54	F	MOGA2	1	#NAN	#NAN	80.3	9.5	0.34	15.0	-4.0	0.39	5.5	1.32	26.3	1422	1.6	124	6
55	F	MOGA2	0	8.14E+00	-9.83E-06	94.1	8.6	0.42	25.2	-4.4	0.37	5.7	1.35	26.8	1429	1.6	72	6
56	F	MOGA2	#NAN	#NAN	#NAN	74.8	9.1	0.30	20.4	-3.4	0.34	5.2	1.57	24.8	1455	1.6	101	4
57	F	MOGA2	0	1.03E+01	-3.92E-05	119.0	9.4	0.43	23.7	-2.7	0.35	5.4	1.55	25.6	1476	1.6	87	5
58	F	MOGA2	0	7.54E+00	1.46E-05	88.6	8.6	0.41	27.6	-4.7	0.36	6.5	1.30	27.2	1440	1.6	70	5
59	F	MOGA2	1	#NAN	#NAN	74.8	9.3	0.30	23.4	-4.8	0.35	5.1	1.38	27.1	1429	1.6	76	5
60	F	MOGA2	1	#NAN	#NAN	124.5	9.7	0.40	17.4	-2.2	0.32	6.0	1.36	27.4	1391	1.6	122	4
61	F	MOGA2	1	#NAN	#NAN	72.0	8.4	0.44	30.0	-4.8	0.39	5.5	1.40	22.8	1431	1.6	117	6
62	F	MOGA2	0	9.15E+00	3.28E-05	96.9	9.2	0.42	30.6	-3.7	0.39	5.7	1.53	29.5	1476	1.6	87	5
63	F	MOGA2	0	7.81E+00	3.05E-05	88.6	8.7	0.41	28.5	-4.6	0.36	6.5	1.30	26.9	1444	1.6	74	6
64	F	MOGA2	0	1.05E+01	6.66E-05	119.0	8.2	0.33	24.3	-3.2	0.37	5.2	1.58	26.0	1380	1.6	104	5
65	F	MOGA2	0	9.51E+00	4.04E-05	116.2	8.1	0.41	32.7	-3.2	0.34	5.7	1.43	28.9	1390	1.6	93	6
66	F	MOGA2	0	1.03E+01	9.47E-05	105.1	8.9	0.40	30.6	-3.9	0.38	5.3	1.50	25.6	1452	1.6	105	5
67	F	MOGA2	0	1.08E+01	1.04E-04	107.9	9.3	0.40	21.3	-4.4	0.36	6.4	1.51	30.0	1480	1.6	113	4
68	F	MOGA2	0	1.00E+01	9.06E-05	110.7	8.1	0.31	29.1	-2.9	0.37	6.0	1.60	28.1	1415	1.6	104	6
69	F	MOGA2	1	#NAN	#NAN	102.4	7.7	0.35	26.1	-2.4	0.33	5.6	1.34	27.3	1451	1.6	121	4
70	F	MOGA2	1	#NAN	#NAN	116.2	8.7	0.34	30.9	-4.8	0.35	5.8	1.37	25.9	1440	1.6	114	4
71	F	MOGA2	0	1.11E+01	1.60E-04	113.4	8.6	0.42	24.6	-2.3	0.36	5.6	1.51	26.0	1470	1.6	125	6

72	F	MOGA2	0	9.84E+00	1.70E-04	88.6	8.5	0.32	22.5	-2.7	0.40	6.3	1.49	27.8	1468	1.6	112	5
73	F	MOGA2	#NAN	#NAN	#NAN	91.3	9.0	0.36	23.4	-2.6	0.39	5.9	1.52	23.3	1464	1.6	112	5
74	F	MOGA2	#NAN	#NAN	#NAN	102.4	8.1	0.33	27.0	-3.6	0.33	6.4	1.54	28.8	1439	1.6	84	5
75	F	MOGA2	1	#NAN	#NAN	130.0	8.1	0.40	15.9	-2.8	0.34	5.3	1.28	24.2	1399	1.6	91	5
76	F	MOGA2	0	1.05E+01	1.64E-04	105.1	7.8	0.32	15.9	-4.2	0.33	5.3	1.34	22.0	1419	1.6	119	5
77	F	MOGA2	1	#NAN	#NAN	85.8	9.0	0.37	16.2	-4.3	0.33	6.4	1.48	27.2	1403	1.6	130	6
78	F	MOGA2	1	#NAN	#NAN	83.0	9.0	0.40	17.4	-2.2	0.36	5.0	1.28	24.5	1388	1.6	123	4
79	F	MOGA2	0	1.11E+01	1.60E-04	113.4	8.6	0.42	24.6	-2.3	0.36	5.6	1.51	26.0	1470	1.6	125	6
80	F	MOGA2	1	#NAN	#NAN	80.3	9.5	0.33	15.0	-4.9	0.39	5.5	1.32	26.3	1422	1.6	124	6
81	F	MOGA2	0	8.25E+00	-1.71E-05	94.1	8.5	0.32	22.5	-2.7	0.40	5.7	1.35	26.8	1429	1.6	72	6
82	F	MOGA2	#NAN	#NAN	#NAN	72.0	9.1	0.30	20.4	-3.4	0.34	5.2	1.57	24.8	1455	1.6	101	4
83	F	MOGA2	0	8.01E+00	1.34E-05	94.1	8.9	0.41	31.8	-4.2	0.37	6.4	1.31	27.7	1459	1.6	75	5
84	F	MOGA2	0	8.27E+00	-3.01E-05	99.6	8.6	0.41	27.6	-4.7	0.36	5.5	1.35	27.2	1440	1.6	70	5
85	F	MOGA2	1	#NAN	#NAN	74.8	7.9	0.30	23.4	-4.8	0.33	5.1	1.38	26.4	1427	1.6	76	5
86	F	MOGA2	1	#NAN	#NAN	124.5	9.7	0.40	17.7	-2.2	0.33	6.0	1.37	27.4	1407	1.6	122	4
87	F	MOGA2	1	#NAN	#NAN	77.5	8.8	0.42	25.2	-4.8	0.39	5.0	1.46	22.8	1431	1.6	117	6
88	F	MOGA2	0	8.78E+00	5.11E-05	96.9	7.8	0.39	16.8	-4.3	0.35	5.6	1.39	29.5	1476	1.6	87	5
89	F	MOGA2	0	8.07E+00	-6.04E-06	94.1	8.8	0.40	29.1	-4.1	0.37	6.1	1.30	26.4	1456	1.6	71	6
90	F	MOGA2	0	7.81E+00	-6.40E-07	88.6	8.6	0.41	27.6	-4.7	0.37	5.2	1.30	27.2	1440	1.6	70	5
91	F	MOGA2	0	9.56E+00	3.84E-05	116.2	8.1	0.41	32.1	-3.2	0.35	5.7	1.43	28.9	1390	1.6	93	6
92	F	MOGA2	0	9.89E+00	1.21E-04	99.6	8.7	0.35	27.3	-3.1	0.40	6.2	1.49	26.6	1465	1.6	108	5
93	F	MOGA2	0	1.09E+01	9.37E-05	110.7	9.0	0.38	18.3	-4.8	0.36	6.2	1.50	30.0	1480	1.6	114	4
94	F	MOGA2	0	9.69E+00	2.11E-05	113.4	8.2	0.31	29.4	-2.6	0.37	6.0	1.55	28.2	1405	1.6	92	6
95	F	MOGA2	1	#NAN	#NAN	102.4	7.7	0.35	24.9	-2.4	0.38	5.1	1.34	27.3	1451	1.6	121	5
96	F	MOGA2	1	#NAN	#NAN	116.2	8.7	0.34	30.9	-4.8	0.35	5.5	1.37	25.9	1440	1.6	114	4
97	F	MOGA2	0	1.02E+01	1.51E-04	96.9	8.5	0.35	23.1	-2.5	0.39	5.9	1.50	26.8	1470	1.6	115	6
98	F	MOGA2	1	#NAN	#NAN	88.6	8.5	0.32	22.5	-2.7	0.40	6.3	1.48	27.8	1476	1.6	112	4
99	F	MOGA2	0	9.10E+00	6.16E-05	99.6	7.6	0.41	19.8	-4.2	0.35	5.2	1.36	29.5	1480	1.6	92	5
100	F	MOGA2	0	7.66E+00	9.70E-06	88.6	8.2	0.41	24.6	-4.7	0.35	6.5	1.36	27.1	1429	1.6	70	6
101	F	MOGA2	0	9.91E+00	6.77E-05	99.6	8.4	0.40	17.4	-3.8	0.40	5.8	1.46	23.1	1388	1.6	99	4
102	F	MOGA2	0	9.99E+00	1.10E-04	107.9	7.7	0.33	15.3	-4.0	0.33	5.4	1.33	22.4	1426	1.6	107	5
103	F	MOGA2	1	#NAN	#NAN	91.3	9.0	0.37	16.2	-4.3	0.33	6.4	1.48	27.2	1436	1.6	130	6
104	F	MOGA2	1	#NAN	#NAN	83.0	9.0	0.38	17.7	-2.2	0.36	5.0	1.28	29.7	1388	1.6	123	4
105	F	MOGA2	0	1.14E+01	1.94E-04	110.7	8.6	0.43	24.9	-2.0	0.36	5.4	1.49	25.0	1466	1.6	130	6
106	F	MOGA2	1	#NAN	#NAN	80.3	9.5	0.33	17.4	-4.9	0.38	5.5	1.32	26.3	1422	1.6	125	6
107	F	MOGA2	0	8.18E+00	-1.12E-05	94.1	8.4	0.40	17.4	-3.8	0.40	5.8	1.35	26.8	1429	1.6	72	6
108	F	MOGA2	#NAN	#NAN	#NAN	72.0	9.1	0.30	20.4	-3.4	0.34	5.2	1.57	24.8	1471	1.6	101	4
109	F	MOGA2	0	#NAN	#NAN	94.1	8.9	0.41	31.8	-2.2	0.37	6.4	1.30	29.0	1392	1.6	74	5
110	F	MOGA2	0	8.43E+00	5.18E-05	96.9	7.8	0.43	28.8	-4.8	0.37	5.8	1.33	28.7	1446	1.6	84	5
111	F	MOGA2	0	9.56E+00	7.94E-05	105.1	8.7	0.39	22.2	-4.1	0.35	6.0	1.35	23.4	1480	1.6	98	6
112	F	MOGA2	0	1.02E+01	9.61E-05	113.4	8.1	0.31	19.5	-2.7	0.40	6.2	1.49	26.0	1436	1.6	108	5
113	F	MOGA2	1	#NAN	#NAN	83.0	9.8	0.36	22.2	-2.3	0.35	5.5	1.43	24.5	1468	1.6	123	5
114	F	MOGA2	0	8.22E+00	9.38E-06	85.8	9.6	0.44	27.6	-2.1	0.34	5.1	1.41	27.7	1403	1.6	75	6
115	F	MOGA2	0	1.00E+01	1.17E-04	91.3	7.6	0.41	25.5	-3.9	0.38	5.4	1.52	29.4	1384	1.6	105	4
116	F	MOGA2	1	#NAN	#NAN	74.8	8.5	0.32	29.7	-3.0	0.36	6.3	1.30	22.1	1417	1.6	114	4
117	F	MOGA2	0	1.12E+01	-9.00E-05	130.0	9.3	0.39	15.9	-3.4	0.39	5.7	1.44	23.8	1456	1.6	88	5
118	F	MOGA2	#NAN	#NAN	#NAN	119.0	9.0	0.34	31.5	-4.7	0.32	5.3	1.57	26.6	1422	1.6	82	4
119	F	MOGA2	0	1.08E+01	2.23E-04	110.7	8.4	0.35	17.7	-3.7	0.33	6.4	1.56	27.0	1395	1.6	129	6
120	F	MOGA2	0	8.11E+00	7.86E-05	85.8	7.8	0.43	28.8	-4.8	0.37	5.8	1.33	28.7	1446	1.6	84	5
121	F	MOGA2	0	9.79E+00	7.76E-05	94.1	8.7	0.39	23.4	-4.0	0.35	5.5	1.36	23.4	1447	1.6	98	4
122	F	MOGA2	0	1.00E+01	1.12E-04	113.4	8.1	0.31	19.5	-3.7	0.33	6.4	1.48	26.0	1436	1.6	108	5
123	F	MOGA2	1	#NAN	#NAN	83.0	9.8	0.36	22.2	-2.4	0.35	5.5	1.43	24.5	1467	1.6	123	5
124	F	MOGA2	0	8.12E+00	-1.15E-05	88.6	8.9	0.42	27.3	-2.2	0.34	5.1	1.41	26.7	1410	1.6	70	6
125	F	MOGA2	1	#NAN	#NAN	74.8	7.6	0.44	25.8	-4.3	0.37	5.1	1.54	30.0	1380	1.6	103	4
126	F	MOGA2	1	#NAN	#NAN	74.8	8.5	0.32	30.3	-3.0	0.33	6.3	1.30	23.4	1415	1.6	114	4
127	F	MOGA2	0	8.79E+00	6.03E-05	94.1	7.7	0.43	24.0	-3.0	0.36	5.2	1.47	27.7	1380	1.6	88	5
128	F	MOGA2	#NAN	#NAN	#NAN	119.0	9.0	0.34	31.5	-4.7	0.32	5.3	1.57	26.6	1422	1.6	82	4
129	F	MOGA2	#NAN	#NAN	#NAN	110.7	8.5	0.36	16.8	-3.8	0.32	6.4	1.60	27.0	1393	1.6	118	6
130	F	MOGA2	1	#NAN	#NAN	83.0	9.8	0.36	22.2	-4.4	0.35	5.5	1.40	24.5	1467	1.6	123	4
131	F	MOGA2	0	7.92E+00	2.52E-06	83.0	9.4	0.42	25.8	-2.0	0.34	5.2	1.40	27.3	1402	1.6	70	6
132	F	MOGA2	1	#NAN	#NAN	74.8	8.0	0.44	26.4	-4.3	0.37	5.1	1.54	30.0	1380	1.6	108	4
133	F	MOGA2	1	#NAN	#NAN	74.8	7.8	0.32	31.5	-3.0	0.33	6.3	1.30	23.5	1415	1.6	114	4
134	F	MOGA2	0	8.79E+00	6.03E-05	94.1	7.7	0.43	24.0	-3.0	0.36	5.2	1.47	27.7	1380	1.6	88	5
135	F	MOGA2	#NAN	#NAN	#NAN	119.0	9.0	0.34	15.0	-4.7	0.32	6.3	1.57	26.6	1439	1.6	82	4
136	F	MOGA2	1	#NAN	#NAN	94.1	8.7	0.36	16.8	-3.8	0.32	5.4	1.50	26.3	1392	1.6	118	6
137	F	MOGA2	0	9.53E+00	8.11E-05	105.1	8.7	0.39	23.4	-3.5	0.35	6.1	1.37	24.1	1480	1.6	97	6
138	F	MOGA2	0	9.70E+00	9.51E-05	91.3	7.6	0.41	25.8	-3.6	0.39	5.4	1.53	30.0	1392	1.6	100	4
139	F	MOGA2	0	1.06E+0														

146	F	MOGA2	1	#NAN	#NAN	91.3	7.6	0.41	25.5	-3.9	0.38	5.8	1.33	29.4	1384	1.6	105	4
147	F	MOGA2	0	9.48E+00	8.34E-05	105.1	8.7	0.39	23.4	-3.8	0.33	6.1	1.37	24.1	1480	1.6	97	6
148	F	MOGA2	0	7.79E+00	6.40E-05	83.0	8.0	0.43	31.8	-5.0	0.37	6.2	1.28	29.4	1480	1.6	79	5
149	F	MOGA2	0	9.84E+00	1.22E-04	107.9	8.0	0.33	19.5	-3.7	0.32	6.3	1.48	26.3	1439	1.6	108	5
150	F	MOGA2	0	9.93E+00	1.99E-04	94.1	8.7	0.36	16.8	-3.8	0.35	6.4	1.51	25.0	1393	1.6	118	6
151	F	MOGA2	0	9.48E+00	1.41E-04	91.3	8.8	0.41	25.5	-3.4	0.34	6.5	1.46	22.0	1472	1.6	104	6
152	F	MOGA2	1	#NAN	#NAN	96.9	8.7	0.35	15.9	-4.6	0.39	5.4	1.30	24.7	1389	1.6	122	5
153	F	MOGA2	1	#NAN	#NAN	88.6	8.0	0.37	15.0	-3.2	0.33	6.3	1.51	26.6	1380	1.6	121	5
154	F	MOGA2	0	9.23E+00	1.64E-04	91.3	7.6	0.41	25.2	-3.4	0.37	5.3	1.33	29.4	1421	1.6	105	6
155	F	MOGA2	0	8.82E+00	1.39E-04	85.8	8.7	0.39	23.4	-3.8	0.33	6.1	1.37	28.7	1478	1.6	97	6
156	F	MOGA2	0	8.41E+00	6.66E-05	91.3	8.1	0.43	33.0	-5.0	0.38	6.2	1.32	28.8	1480	1.6	86	5
157	F	MOGA2	0	9.41E+00	1.20E-04	99.6	9.1	0.40	26.1	-3.5	0.34	6.4	1.39	22.9	1439	1.6	101	6
158	F	MOGA2	0	1.08E+01	1.62E-04	121.7	8.1	0.35	20.1	-3.8	0.35	6.2	1.55	26.7	1405	1.6	123	6
159	F	MOGA2	0	7.74E+00	3.17E-06	88.6	7.7	0.45	26.7	-5.0	0.38	5.8	1.42	28.5	1445	1.6	70	5
160	F	MOGA2	#NAN	#NAN	#NAN	110.7	8.0	0.37	15.0	-3.2	0.34	6.3	1.51	26.2	1380	1.6	81	5
161	F	MOGA2	1	#NAN	#NAN	88.6	7.6	0.42	24.3	-3.1	0.38	5.0	1.31	30.0	1408	1.6	111	6
162	F	MOGA2	1	#NAN	#NAN	85.8	8.4	0.39	23.4	-3.8	0.33	6.1	1.37	28.7	1478	1.6	97	6
163	F	MOGA2	#NAN	#NAN	#NAN	94.1	8.3	0.42	32.1	-5.0	0.38	6.2	1.34	28.9	1480	1.6	84	5
164	F	MOGA2	0	8.71E+00	3.50E-05	99.6	7.8	0.43	28.8	-4.8	0.37	5.8	1.39	22.9	1439	1.6	84	5
165	F	MOGA2	0	#NAN	#NAN	130.0	7.6	0.40	19.2	-3.5	0.34	6.1	1.56	25.7	1405	1.6	130	6
166	F	MOGA2	1	#NAN	#NAN	74.8	7.9	0.44	27.3	-4.7	0.37	5.7	1.40	28.1	1451	1.6	91	5
167	F	MOGA2	#NAN	#NAN	#NAN	110.7	8.4	0.35	17.7	-2.7	0.33	6.4	1.56	27.0	1395	1.6	90	6
168	F	MOGA2	0	7.46E+00	1.88E-05	88.6	7.7	0.42	24.9	-5.0	0.38	5.9	1.28	29.6	1440	1.6	70	4
169	F	MOGA2	0	8.32E+00	1.08E-04	83.0	9.5	0.43	31.8	-5.0	0.34	6.2	1.28	29.4	1480	1.6	89	5
170	F	MOGA2	1	#NAN	#NAN	74.8	7.9	0.44	27.3	-4.7	0.37	5.5	1.40	28.1	1451	1.6	91	5
171	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.4	0.35	17.7	-2.7	0.33	6.4	1.56	24.2	1395	1.6	95	6
172	F	MOGA2	0	9.16E+00	1.69E-04	88.6	7.6	0.41	25.2	-3.4	0.37	5.3	1.33	29.6	1421	1.6	105	6
173	F	MOGA2	0	8.15E+00	7.22E-05	83.0	9.3	0.43	33.0	-5.0	0.34	6.2	1.28	29.3	1480	1.6	84	5
174	F	MOGA2	0	1.11E+01	2.05E-04	119.0	8.4	0.35	18.9	-3.7	0.33	6.3	1.60	27.0	1409	1.6	130	6
175	F	MOGA2	1	#NAN	#NAN	77.5	8.0	0.40	27.3	-5.0	0.37	5.6	1.30	29.0	1436	1.6	101	5
176	F	MOGA2	0	8.13E+00	4.50E-05	83.0	8.0	0.43	27.0	-2.1	0.37	5.2	1.28	29.4	1479	1.6	79	5
177	T	MOGA2	0	9.73E+00	1.86E-04	91.3	8.7	0.33	15.6	-3.8	0.35	6.5	1.50	25.8	1387	1.6	115	6
178	F	MOGA2	1	#NAN	#NAN	83.0	7.6	0.41	25.2	-3.4	0.37	5.3	1.28	29.4	1414	1.6	105	6
179	F	MOGA2	1	#NAN	#NAN	83.0	8.7	0.38	23.4	-4.0	0.33	6.1	1.37	28.7	1479	1.6	97	6
180	T	MOGA2	0	9.73E+00	1.86E-04	91.3	8.7	0.33	15.6	-3.8	0.35	6.5	1.50	25.8	1387	1.6	115	6
181	F	MOGA2	1	#NAN	#NAN	83.0	8.0	0.41	25.2	-3.8	0.37	5.5	1.28	24.5	1414	1.6	105	6
182	F	MOGA2	1	#NAN	#NAN	83.0	8.7	0.38	23.4	-3.9	0.33	6.0	1.37	29.1	1479	1.6	97	6
183	T	MOGA2	0	1.07E+01	2.24E-04	110.7	8.4	0.35	15.6	-3.8	0.35	6.5	1.50	27.0	1395	1.6	129	6
184	F	MOGA2	0	8.13E+00	7.79E-05	85.8	7.6	0.43	29.4	-5.0	0.37	5.7	1.34	28.9	1440	1.6	85	5
185	F	MOGA2	0	8.37E+00	1.08E-04	83.0	9.5	0.43	31.8	-5.0	0.37	6.2	1.28	29.4	1480	1.6	89	5
186	F	MOGA2	1	#NAN	#NAN	85.8	8.7	0.36	16.8	-4.8	0.37	5.8	1.33	28.7	1446	1.6	118	6
187	F	MOGA2	1	#NAN	#NAN	85.8	8.7	0.33	15.6	-3.8	0.35	6.1	1.37	28.7	1478	1.6	97	6
188	F	MOGA2	0	7.45E+00	1.94E-05	85.8	7.8	0.45	24.9	-4.8	0.37	5.8	1.28	28.7	1453	1.6	70	4
189	F	MOGA2	0	8.37E+00	9.20E-05	83.0	9.7	0.45	33.0	-5.0	0.33	6.3	1.30	29.3	1468	1.6	88	5
190	F	MOGA2	1	#NAN	#NAN	85.8	8.5	0.31	16.8	-4.9	0.37	5.9	1.43	27.3	1446	1.6	118	6
191	F	MOGA2	1	#NAN	#NAN	85.8	8.7	0.33	15.6	-3.8	0.35	6.1	1.37	28.8	1479	1.6	97	6
192	F	MOGA2	0	8.11E+00	7.86E-05	85.8	7.8	0.43	28.8	-4.8	0.37	5.8	1.33	28.7	1446	1.6	84	5
193	F	MOGA2	1	#NAN	#NAN	83.0	8.7	0.39	23.4	-5.0	0.33	6.3	1.30	29.3	1478	1.6	97	6
194	F	MOGA2	0	8.18E+00	8.30E-05	85.8	7.7	0.42	27.0	-4.8	0.38	6.1	1.31	29.0	1460	1.6	85	5
195	F	MOGA2	0	7.75E+00	6.81E-05	80.3	7.7	0.42	29.4	-5.0	0.38	6.2	1.34	29.3	1480	1.6	79	5
196	T	MOGA2	0	9.68E+00	1.85E-04	94.1	8.7	0.36	16.8	-4.0	0.35	6.5	1.46	24.2	1409	1.6	113	6
197	F	MOGA2	0	8.76E+00	1.45E-04	85.8	8.6	0.39	24.0	-3.6	0.32	6.2	1.34	28.4	1459	1.6	99	6
198	F	MOGA2	0	8.34E+00	1.07E-04	83.0	9.1	0.41	33.0	-5.0	0.34	6.2	1.28	29.5	1480	1.6	90	5
199	F	MOGA2	1	#NAN	#NAN	88.6	8.0	0.43	31.8	-5.0	0.37	6.2	1.28	29.6	1421	1.6	105	5
200	T	MOGA2	0	7.76E+00	8.61E-05	74.8	7.6	0.41	28.5	-4.9	0.38	6.2	1.34	29.5	1471	1.6	81	5
201	F	MOGA2	0	9.96E+00	2.09E-04	94.1	8.7	0.38	16.2	-4.0	0.35	6.4	1.42	23.1	1419	1.6	120	6
202	F	MOGA2	0	8.76E+00	1.36E-04	85.8	8.6	0.38	23.7	-3.1	0.33	6.2	1.35	28.7	1462	1.6	97	6
203	F	MOGA2	0	8.34E+00	1.07E-04	83.0	9.1	0.41	33.0	-5.0	0.34	6.2	1.28	29.5	1480	1.6	90	5
204	F	MOGA2	0	8.14E+00	6.10E-05	88.6	8.0	0.43	31.8	-5.0	0.37	6.2	1.33	24.2	1428	1.6	81	5
205	F	MOGA2	0	7.89E+00	5.07E-05	83.0	9.5	0.43	31.8	-5.0	0.34	6.2	1.28	29.4	1480	1.6	78	5
206	F	MOGA2	1	#NAN	#NAN	88.6	7.6	0.41	24.0	-4.1	0.38	5.0	1.31	29.6	1429	1.6	114	6
207	F	MOGA2	#NAN	#NAN	#NAN	91.3	8.8	0.35	15.9	-3.7	0.35	6.4	1.51	24.5	1400	1.6	108	6
208	F	MOGA2	0	9.11E+00	1.71E-04	88.6	7.6	0.41	25.2	-3.4	0.37	5.3	1.33	29.6	1395	1.6	105	6
209	F	MOGA2	0	8.36E+00	1.07E-04	83.0	9.5	0.45	24.9	-4.8	0.37	6.2	1.28	29.4	1480	1.6	89	5
210	F	MOGA2	1	#NAN	#NAN	88.6	7.6	0.41	24.0	-4.1	0.38	5.0	1.31	29.6	1429	1.6	114	6
211	F	MOGA2	0	9.28E+00	1.64E-04	91.3	8.1	0.35	15.9	-3.7	0.35	6.4	1.51	29.7	1400	1.6	108	6
212	F	MOGA2	1	#NAN	#NAN	91.3	7.6	0.41	24.6	-3.4	0.39	5.5	1.32	30.0	1398	1.6	108	6</td

220	F	MOGA2	0	7.63E+00	1.67E-05	85.8	8.6	0.42	25.2	-3.6	0.32	6.2	1.34	28.4	1459	1.6	70	6
221	F	MOGA2	0	1.04E+01	1.90E-04	105.1	8.4	0.36	15.0	-3.5	0.34	6.5	1.56	26.3	1411	1.6	122	6
222	F	MOGA2	0	7.81E+00	-1.32E-06	94.1	7.8	0.45	23.1	-4.9	0.38	5.8	1.34	28.6	1461	1.6	70	4
223	F	MOGA2	0	7.47E+00	2.97E-05	80.3	8.6	0.39	24.0	-3.6	0.32	6.2	1.34	29.3	1480	1.6	70	6
224	F	MOGA2	#NAN	#NAN	#NAN	94.1	7.6	0.41	28.5	-4.9	0.38	6.5	1.46	24.2	1474	1.6	81	5
225	F	MOGA2	1	#NAN	#NAN	74.8	8.6	0.39	28.8	-4.9	0.38	6.2	1.34	29.5	1471	1.6	99	6
226	F	MOGA2	0	7.76E+00	8.61E-05	74.8	7.6	0.41	28.5	-4.9	0.38	6.2	1.34	29.5	1471	1.6	81	5
227	F	MOGA2	0	9.96E+00	2.09E-04	94.1	8.7	0.38	16.2	-4.0	0.35	6.4	1.42	23.1	1419	1.6	120	6
228	F	MOGA2	0	8.67E+00	1.41E-04	85.8	7.7	0.42	29.4	-5.0	0.38	6.2	1.35	28.7	1462	1.6	97	6
229	F	MOGA2	0	7.98E+00	4.82E-05	88.6	7.7	0.42	29.4	-3.5	0.37	5.3	1.33	29.6	1380	1.6	79	5
230	F	MOGA2	0	8.57E+00	1.48E-04	85.8	7.7	0.42	29.4	-5.0	0.33	6.4	1.35	28.7	1462	1.6	97	6
231	F	MOGA2	0	8.30E+00	9.50E-05	88.6	7.7	0.41	29.4	-3.7	0.37	5.3	1.31	29.5	1380	1.6	89	6
232	F	MOGA2	0	7.56E+00	2.26E-05	88.6	8.0	0.45	23.7	-4.8	0.38	6.0	1.28	28.8	1446	1.6	71	4
233	F	MOGA2	0	7.79E+00	5.38E-05	83.0	7.8	0.43	30.3	-5.0	0.38	6.4	1.35	29.3	1480	1.6	78	5
234	F	MOGA2	0	9.74E+00	1.81E-04	94.1	8.8	0.36	15.6	-4.1	0.37	6.5	1.48	24.2	1409	1.6	113	6
235	F	MOGA2	0	9.15E+00	1.59E-04	91.3	8.7	0.38	23.4	-3.4	0.32	6.2	1.32	28.5	1459	1.6	103	6
236	F	MOGA2	0	7.76E+00	8.61E-05	74.8	7.6	0.41	28.5	-4.9	0.38	6.2	1.34	29.5	1471	1.6	81	5
237	F	MOGA2	0	8.76E+00	1.45E-04	85.8	8.6	0.39	24.0	-3.6	0.32	6.2	1.34	28.4	1459	1.6	99	6
238	F	MOGA2	1	#NAN	#NAN	83.0	7.6	0.41	25.2	-3.4	0.37	6.2	1.28	29.4	1414	1.6	105	6
239	F	MOGA2	0	8.44E+00	9.76E-05	85.8	9.5	0.45	24.9	-4.8	0.37	6.2	1.28	28.7	1480	1.6	89	5
240	F	MOGA2	1	#NAN	#NAN	72.0	7.6	0.41	25.2	-3.4	0.37	6.2	1.28	29.4	1419	1.6	105	6
241	F	MOGA2	0	8.27E+00	9.92E-05	83.0	9.3	0.44	24.9	-4.3	0.37	6.4	1.28	29.3	1464	1.6	88	5
242	F	MOGA2	0	#NAN	#NAN	85.8	7.6	0.45	23.4	-4.8	0.37	5.8	1.28	28.6	1454	1.6	70	5
243	F	MOGA2	#NAN	#NAN	#NAN	124.5	7.7	0.44	29.4	-5.0	0.38	6.3	1.34	29.3	1447	1.6	79	5
244	F	MOGA2	1	#NAN	#NAN	91.3	8.9	0.36	15.0	-4.2	0.35	6.5	1.43	22.0	1394	1.6	120	6
245	F	MOGA2	1	#NAN	#NAN	74.8	7.6	0.40	27.9	-5.0	0.38	6.3	1.34	29.7	1470	1.6	84	5
246	F	MOGA2	1	#NAN	#NAN	74.8	8.7	0.38	16.2	-4.0	0.35	6.3	1.34	29.5	1419	1.6	120	6
247	F	MOGA2	1	#NAN	#NAN	88.6	8.4	0.42	26.1	-3.4	0.37	5.0	1.34	27.1	1397	1.6	111	6
248	F	MOGA2	0	8.58E+00	1.06E-04	83.0	9.8	0.45	24.9	-5.0	0.38	6.2	1.30	29.4	1480	1.6	91	5
249	T	MOGA2	0	9.07E+00	1.77E-04	88.6	7.6	0.41	25.2	-3.6	0.32	5.2	1.33	29.6	1395	1.6	105	6
250	F	MOGA2	0	#NAN	#NAN	83.0	7.6	0.45	24.9	-5.0	0.38	6.2	1.40	29.4	1384	1.6	91	5
251	F	MOGA2	1	#NAN	#NAN	88.6	9.0	0.41	25.2	-3.6	0.34	5.2	1.37	29.6	1453	1.6	108	6
252	F	MOGA2	0	7.63E+00	3.06E-05	85.8	7.8	0.45	25.5	-4.9	0.37	5.7	1.29	28.6	1448	1.6	73	4
253	F	MOGA2	0	7.38E+00	5.11E-05	77.5	7.8	0.42	26.7	-5.0	0.39	6.2	1.34	30.0	1471	1.6	73	5
254	F	MOGA2	1	#NAN	#NAN	94.1	9.1	0.35	15.0	-3.6	0.34	6.2	1.49	22.9	1429	1.6	120	6
255	F	MOGA2	0	7.41E+00	2.21E-05	85.8	7.6	0.41	28.5	-4.9	0.37	5.8	1.28	28.7	1453	1.6	70	4
256	F	MOGA2	0	8.55E+00	1.06E-04	83.0	9.8	0.38	16.2	-4.0	0.35	6.2	1.30	29.4	1480	1.6	91	5
257	F	MOGA2	0	7.75E+00	6.81E-05	80.3	7.7	0.42	29.4	-5.0	0.38	6.2	1.34	29.3	1480	1.6	79	5
258	F	MOGA2	0	7.49E+00	2.86E-05	80.3	8.6	0.39	24.0	-3.6	0.32	6.2	1.35	29.3	1480	1.6	70	6
259	F	MOGA2	1	#NAN	#NAN	88.6	7.6	0.41	25.2	-3.6	0.32	5.2	1.33	29.6	1463	1.6	105	6
260	T	MOGA2	0	7.86E+00	9.12E-05	80.3	7.6	0.42	27.3	-4.5	0.37	6.2	1.34	29.5	1474	1.6	83	6
261	F	MOGA2	0	7.49E+00	2.86E-05	80.3	8.6	0.39	24.0	-3.6	0.32	6.2	1.35	29.3	1480	1.6	70	6
262	F	MOGA2	1	#NAN	#NAN	88.6	7.6	0.42	25.2	-4.2	0.32	5.2	1.33	29.6	1463	1.6	105	6
263	F	MOGA2	0	1.02E+01	1.93E-04	102.4	8.5	0.39	19.5	-4.5	0.35	6.5	1.50	24.4	1399	1.6	120	6
264	F	MOGA2	0	7.49E+00	2.86E-05	80.3	8.6	0.39	24.0	-3.6	0.32	6.2	1.35	29.3	1480	1.6	70	6
265	F	MOGA2	0	9.99E+00	2.06E-04	96.9	8.7	0.38	16.2	-4.0	0.32	6.4	1.42	23.1	1419	1.6	120	6
266	F	MOGA2	0	8.42E+00	7.36E-05	85.8	9.4	0.45	25.2	-4.9	0.37	6.2	1.33	28.7	1480	1.6	86	5
267	F	MOGA2	0	8.57E+00	1.28E-04	91.3	7.6	0.42	29.7	-4.9	0.34	6.4	1.36	28.6	1463	1.6	96	6
268	F	MOGA2	1	#NAN	#NAN	83.0	9.3	0.44	24.9	-4.3	0.37	6.4	1.30	29.3	1464	1.6	108	5
269	F	MOGA2	1	#NAN	#NAN	88.6	7.6	0.41	25.2	-3.6	0.32	6.2	1.33	29.6	1395	1.6	105	6
270	F	MOGA2	1	#NAN	#NAN	88.6	7.7	0.41	26.4	-3.8	0.32	6.2	1.33	29.6	1395	1.6	105	6
271	F	MOGA2	#NAN	#NAN	#NAN	77.5	7.7	0.42	29.4	-4.1	0.35	6.5	1.46	24.2	1480	1.6	79	5
272	F	MOGA2	0	9.54E+00	1.50E-04	94.1	8.5	0.36	19.8	-4.2	0.35	6.5	1.47	23.8	1428	1.6	108	6
273	F	MOGA2	1	#NAN	#NAN	72.0	7.7	0.41	25.5	-5.0	0.37	6.1	1.31	28.5	1470	1.6	81	6
274	T	MOGA2	0	9.89E+00	2.15E-04	94.1	8.7	0.38	24.6	-4.8	0.35	6.4	1.42	23.1	1419	1.6	120	6
275	F	MOGA2	1	#NAN	#NAN	85.8	9.3	0.45	27.6	-4.5	0.36	6.4	1.28	29.1	1480	1.6	102	5
276	F	MOGA2	1	#NAN	#NAN	83.0	7.6	0.42	28.8	-4.9	0.33	6.4	1.34	28.6	1466	1.6	106	6
277	F	MOGA2	0	7.43E+00	4.89E-05	77.5	7.8	0.44	24.9	-4.3	0.37	6.4	1.28	22.6	1471	1.6	73	5
278	F	MOGA2	0	8.53E+00	1.46E-04	85.8	7.8	0.40	24.9	-3.2	0.34	5.7	1.34	29.6	1402	1.6	96	6
279	T	MOGA2	0	7.60E+00	8.39E-05	74.8	7.9	0.42	27.6	-5.0	0.37	6.3	1.34	30.0	1465	1.6	79	5
280	F	MOGA2	0	7.69E+00	6.60E-05	77.5	7.8	0.45	24.0	-4.0	0.36	6.4	1.28	22.8	1462	1.6	77	5
281	T	MOGA2	0	8.49E+00	1.48E-04	85.8	7.8	0.40	24.9	-4.2	0.34	5.7	1.34	29.6	1402	1.6	96	6
282	F	MOGA2	1	#NAN	#NAN	72.0	7.8	0.43	27.6	-4.9	0.37	6.2	1.34	30.0	1460	1.6	75	5
283	F	MOGA2	1	#NAN	#NAN	74.8	7.6	0.41	28.5	-4.9	0.33	6.4	1.35	29.5	1471	1.6	81	5
284	F	MOGA2	0	8.38E+00	9.84E-05	83.0	9.8	0.45	25.5	-4.9	0.37	6.2	1.28	29.3	1480	1.6	88	5
285	T	MOGA2	0	8.33E+00	1.27E-04	85.8	7.7	0.42	30.6	-5.0	0.32	6.4	1.36	29.0	1461	1.6	93	6
286	F	MOGA2	0	8.18E+00	1.19E-04	80.3	8.6	0.45	25.2	-4.2	0.37	6.4	1.28	29.				

294	F	MOGA2	0	7.94E+00	8.80E-05	83.0	7.6	0.45	27.0	-4.6	0.36	6.3	1.34	29.5	1476	1.6	84	6
295	T	MOGA2	0	7.27E+00	4.25E-05	74.8	7.6	0.41	28.2	-4.9	0.38	6.2	1.34	28.1	1471	1.6	71	5
296	F	MOGA2	0	8.07E+00	7.41E-05	88.6	7.6	0.42	27.3	-4.5	0.32	5.2	1.33	29.6	1395	1.6	83	6
297	T	MOGA2	0	8.13E+00	1.23E-04	80.3	8.1	0.44	27.0	-4.5	0.37	6.3	1.35	30.0	1460	1.6	90	6
298	F	MOGA2	1	#NAN	#NAN	96.9	8.7	0.37	24.0	-4.8	0.36	6.4	1.40	24.6	1412	1.6	120	6
299	F	MOGA2	1	#NAN	#NAN	77.5	7.9	0.42	27.9	-5.0	0.38	6.3	1.33	30.0	1459	1.6	88	5
300	T	MOGA2	0	8.09E+00	1.15E-04	80.3	8.2	0.44	27.0	-4.6	0.37	6.3	1.35	30.0	1460	1.6	88	6
301	F	MOGA2	0	8.13E+00	1.23E-04	80.3	8.1	0.44	27.0	-4.5	0.37	6.3	1.35	30.0	1460	1.6	90	6
302	F	MOGA2	0	8.10E+00	1.15E-04	77.5	7.9	0.42	27.9	-5.0	0.39	6.3	1.36	30.0	1459	1.6	88	5
303	F	MOGA2	#NAN	#NAN	#NAN	77.5	7.6	0.42	27.9	-4.4	0.37	6.3	1.36	27.8	1474	1.6	83	6

Appendix F– Optimization results

Optimum network/Optimum aircraft (10 airports)

d#	PAR	CAT	NO PASS	NDOC	NP	wS	wAR	wTR	wSweep	wTwist	Kink	BPR	eDiam	OPR	eTIT	FPR	Npax	nSeat
0	F	ULH	1.00E+00	#NAN	#NAN	127.2	9.7	0.31	24.6	-3.5	0.40	5.4	1.32	28.5	1413	1.6	101	6
1	F	ULH	#NAN	#NAN	#NAN	77.5	7.9	0.37	15.9	-2.1	0.35	6.2	1.47	26.6	1440	1.6	103	6
2	F	ULH	0.00E+00	10.60579475	4.04E-04	121.7	8.0	0.33	31.8	-3.1	0.37	5.3	1.44	29.8	1447	1.6	97	5
3	F	ULH	0.00E+00	10.94356907	3.80E-04	110.7	7.7	0.45	18.9	-5.0	0.36	5.3	1.56	28.0	1388	1.6	107	4
4	F	ULH	0.00E+00	10.15417911	4.20E-04	88.6	8.5	0.32	22.5	-2.7	0.40	6.3	1.49	27.8	1468	1.6	112	5
5	F	ULH	#NAN	#NAN	#NAN	107.9	9.0	0.36	22.2	-2.6	0.38	5.9	1.52	23.3	1464	1.6	78	5
6	F	ULH	#NAN	#NAN	#NAN	80.3	9.6	0.36	27.0	-3.6	0.33	6.4	1.54	28.8	1410	1.6	89	5
7	F	ULH	#NAN	#NAN	#NAN	130.0	8.1	0.43	20.7	-2.5	0.39	5.8	1.28	24.2	1434	1.6	76	5
8	F	ULH	1.00E+00	#NAN	#NAN	94.1	7.8	0.32	25.2	-4.7	0.35	6.3	1.34	22.0	1419	1.6	114	4
9	F	ULH	1.00E+00	#NAN	#NAN	124.5	8.9	0.37	16.2	-4.3	0.33	6.4	1.46	23.9	1403	1.6	130	6
10	F	ULH	1.00E+00	#NAN	#NAN	83.0	9.0	0.35	27.3	-2.2	0.36	5.2	1.35	24.5	1386	1.6	123	4
11	F	ULH	0.00E+00	10.06240261	3.25E-04	105.1	9.5	0.44	32.1	-3.7	0.34	6.2	1.42	22.5	1462	1.6	90	4
12	F	ULH	1.00E+00	#NAN	#NAN	80.3	9.4	0.39	15.0	-4.0	0.38	5.5	1.32	26.3	1422	1.6	124	6
13	F	ULH	0.00E+00	9.075719002	2.53E-04	99.6	8.7	0.42	21.0	-4.2	0.37	5.0	1.43	25.2	1429	1.6	70	5
14	F	ULH	#NAN	#NAN	#NAN	74.8	9.1	0.33	20.4	-3.3	0.34	5.2	1.57	24.8	1455	1.6	81	4
15	F	ULH	0.00E+00	9.141870232	3.32E-04	96.9	7.8	0.39	16.8	-4.3	0.35	5.6	1.39	29.1	1476	1.6	87	5
467	T	ULH	0.00E+00	7.683462348	2.53E-04	77.5	8.6	0.33	22.8	-4.3	0.38	6.2	1.28	24.7	1429	1.6	71	6
17	F	ULH	0.00E+00	8.656923554	2.93E-04	85.8	9.2	0.30	19.5	-4.6	0.34	5.1	1.38	25.1	1425	1.6	76	5
18	F	ULH	0.00E+00	10.24087171	3.28E-04	124.5	9.7	0.40	17.4	-2.1	0.32	6.0	1.36	27.4	1391	1.6	83	4
19	F	ULH	1.00E+00	#NAN	#NAN	72.0	8.6	0.44	30.0	-2.9	0.39	5.5	1.40	22.8	1431	1.6	117	6
20	F	ULH	0.00E+00	10.21621157	3.81E-04	96.9	9.2	0.42	30.6	-3.7	0.39	5.7	1.53	28.2	1401	1.6	105	5
21	F	ULH	0.00E+00	10.1163687	3.38E-04	91.3	8.5	0.40	18.3	-3.8	0.39	5.9	1.48	23.7	1400	1.6	99	4
22	F	ULH	#NAN	#NAN	#NAN	119.0	8.2	0.34	24.3	-3.2	0.37	6.1	1.58	26.0	1380	1.6	94	5
23	F	ULH	1.00E+00	#NAN	#NAN	74.8	8.3	0.41	32.7	-3.2	0.34	5.7	1.43	29.6	1394	1.6	93	6
24	F	ULH	0.00E+00	10.9144656	3.98E-04	113.4	8.4	0.38	27.9	-4.1	0.32	5.1	1.50	23.4	1457	1.6	108	6
25	F	ULH	0.00E+00	11.40616827	4.86E-04	102.4	9.3	0.38	23.1	-4.4	0.38	6.1	1.50	29.4	1477	1.6	119	4
26	F	ULH	#NAN	#NAN	#NAN	110.7	8.1	0.31	29.1	-2.9	0.37	6.0	1.60	22.8	1415	1.6	84	6
27	F	ULH	1.00E+00	#NAN	#NAN	102.4	7.7	0.35	26.1	-2.3	0.33	5.6	1.29	27.3	1450	1.6	121	4
28	F	ULH	1.00E+00	#NAN	#NAN	116.2	8.8	0.34	30.9	-4.9	0.36	5.8	1.37	25.9	1440	1.6	112	4
29	F	ULH	0.00E+00	12.1433674	7.45E-04	119.0	9.4	0.43	23.7	-2.7	0.35	5.4	1.55	25.6	1472	1.6	127	6
30	F	ULH	1.00E+00	#NAN	#NAN	127.2	9.7	0.30	24.6	-3.5	0.40	5.4	1.31	28.2	1412	1.6	100	6
31	F	MOGA2	#NAN	#NAN	#NAN	77.5	7.9	0.37	15.3	-2.1	0.35	6.1	1.47	26.0	1440	1.6	102	6
32	F	MOGA2	0.00E+00	10.29758409	3.80E-04	119.0	7.7	0.33	31.8	-3.4	0.37	5.4	1.46	30.0	1441	1.6	95	5
33	F	MOGA2	0.00E+00	11.05436171	3.72E-04	110.7	7.7	0.45	28.5	-4.5	0.36	5.1	1.56	28.0	1420	1.6	107	4
34	F	MOGA2	0.00E+00	9.702107227	3.39E-04	88.6	8.5	0.32	22.5	-2.7	0.40	6.3	1.49	27.8	1468	1.6	93	4
35	F	MOGA2	#NAN	#NAN	#NAN	91.3	9.0	0.36	22.2	-2.6	0.38	5.9	1.52	23.3	1464	1.6	78	5
36	F	MOGA2	#NAN	#NAN	#NAN	102.4	8.1	0.31	27.0	-3.6	0.33	6.4	1.54	28.8	1406	1.6	89	5
37	F	MOGA2	1.00E+00	#NAN	#NAN	130.0	8.1	0.43	20.7	-2.5	0.33	5.8	1.28	24.2	1434	1.6	91	5
38	F	MOGA2	1.00E+00	#NAN	#NAN	94.1	7.8	0.32	15.6	-4.7	0.35	6.3	1.34	22.0	1419	1.6	114	5
39	F	MOGA2	1.00E+00	#NAN	#NAN	124.5	8.9	0.37	16.2	-4.3	0.33	6.4	1.46	27.2	1403	1.6	130	6
40	F	MOGA2	1.00E+00	#NAN	#NAN	83.0	9.0	0.40	27.0	-2.2	0.36	5.0	1.29	24.5	1388	1.6	123	4
41	F	MOGA2	0.00E+00	10.35194253	3.65E-04	116.2	9.8	0.45	33.0	-3.7	0.34	6.0	1.37	22.6	1450	1.6	85	4
42	F	MOGA2	1.00E+00	#NAN	#NAN	80.3	9.5	0.34	15.0	-4.0	0.39	5.5	1.32	26.3	1422	1.6	124	6
43	F	MOGA2	0.00E+00	9.259210466	3.00E-04	99.6	8.5	0.42	20.7	-4.1	0.38	5.0	1.43	25.2	1413	1.6	77	5
44	F	MOGA2	#NAN	#NAN	#NAN	74.8	9.1	0.30	20.4	-3.4	0.34	5.2	1.57	24.8	1455	1.6	101	4
45	F	MOGA2	0.00E+00	10.82688253	3.55E-04	119.0	9.4	0.43	23.7	-2.7	0.35	5.4	1.55	25.6	1476	1.6	87	5
440	T	MOGA2	0.00E+00	7.804628394	2.58E-04	80.3	8.9	0.33	22.5	-4.4	0.38	6.2	1.28	25.0	1412	1.6	72	6
47	F	MOGA2	1.00E+00	#NAN	#NAN	74.8	9.3	0.30	23.4	-4.8	0.35	5.1	1.38	27.1	1429	1.6	76	5
48	F	MOGA2	1.00E+00	#NAN	#NAN	124.5	9.7	0.40	17.4	-2.2	0.32	6.0	1.36	27.4	1391	1.6	122	4
49	F	MOGA2	1.00E+00	#NAN	#NAN	72.0	8.4	0.44	30.0	-4.8	0.39	5.5	1.40	22.8	1431	1.6	117	6
50	F	MOGA2	0.00E+00	9.57748182	3.32E-04	96.9	9.2	0.42	30.6	-3.7	0.39	5.7	1.53	29.5	1476	1.6	87	5
51	F	MOGA2	0.00E+00	8.164944458	2.69E-04	88.6	8.7	0.41	28.5	-4.6	0.36	6.5	1.30	26.9	1444	1.6	74	6
52	F	MOGA2	0.00E+00	10.87663455	3.67E-04	119.0	8.2	0.33	24.3	-3.2	0.37	5.2	1.58	26.0	1380	1.6	104	5
53	F	MOGA2	0.00E+00	9.934183033	3.60E-04	116.2	8.1	0.41	32.7	-3.2	0.34	5.7	1.43	28.9	1390	1.6	93	6
54	F	MOGA2	0.00E+00	10.57172667	3.65E-04	107.9	8.4	0.36	29.1	-4.2	0.34	5.1	1.50	25.4	1460	1.6	107	6
55	F	MOGA2	0.00E+00	11.27036988	4.08E-04	107.9	9.3	0.40	21.3	-4.4	0.36	6.4	1.51	30.0	1480	1.6	113	4
56	F	MOGA2	0.00E+00	10.34268362	3.49E-04	110.7	8.1	0.31	29.1	-2.9	0.37	6.0	1.60	28.1	1415	1.6	104	6
57	F	MOGA2	1.00E+00	#NAN	#NAN	102.4	7.7	0.35	26.1	-2.4	0.33	5.6	1.34	27.3	1451	1.6	121	4
58	F	MOGA2	1.00E+00	#NAN	#NAN	116.2	8.7	0.34	30.9	-4.8	0.35	5.8	1.37	25.9	1440	1.6	114	4
59	F	MOGA2	0.00E+00	12.4015404	8.79E-04	119.0	9.4	0.45	25.2	-2.3	0.34	5.3	1.56	24.1	1474	1.6	130	6
60	F	MOGA2	#NAN	#NAN	#NAN	102.4	8.1	0.31	27.0	-3.6	0.33	6.4	1.51	28.8	1406	1.6	89	5
61	F	MOGA2	1.00E+00	#NAN	#NAN	130.0	8.1	0.43	20.7	-2.5	0.33	5.9	1.28	29.4	1434	1.6	91	5
62	F	MOGA2	1.00E+00	#NAN	#NAN	72.0	7.9	0.32	15.6	-4.7	0.35	6.3	1.34	22.0	1428	1.6	114	5

63	F	MOGA2	1.00E+00	#NAN	#NAN	124.5	8.9	0.37	16.2	-4.3	0.33	6.4	1.46	27.2	1403	1.6	129	6
64	F	MOGA2	1.00E+00	#NAN	#NAN	83.0	9.0	0.40	27.0	-2.2	0.36	5.0	1.29	24.3	1388	1.6	88	4
65	F	MOGA2	0.00E+00	10.44050479	3.55E-04	116.2	9.8	0.45	33.0	-3.7	0.36	6.4	1.51	22.6	1450	1.6	85	4
66	F	MOGA2	1.00E+00	#NAN	#NAN	80.3	9.5	0.34	15.0	-4.0	0.39	5.5	1.38	26.3	1422	1.6	124	6
67	F	MOGA2	0.00E+00	10.80765371	4.45E-04	99.6	8.5	0.42	20.7	-4.1	0.38	5.0	1.43	25.2	1413	1.6	116	5
68	F	MOGA2	#NAN	#NAN	#NAN	74.8	9.1	0.30	20.4	-3.4	0.34	5.2	1.57	24.8	1455	1.6	101	4
69	F	MOGA2	#NAN	#NAN	#NAN	110.7	9.3	0.43	21.6	-2.5	0.34	5.2	1.60	26.6	1479	1.6	83	5
70	F	MOGA2	#NAN	#NAN	#NAN	96.9	8.6	0.41	27.6	-4.7	0.36	6.5	1.39	29.1	1476	1.6	87	5
71	F	MOGA2	#NAN	#NAN	#NAN	107.9	9.3	0.30	23.4	-4.8	0.35	6.1	1.33	27.1	1429	1.6	76	5
72	F	MOGA2	#NAN	#NAN	#NAN	124.5	8.1	0.40	17.4	-2.2	0.34	6.0	1.36	28.1	1389	1.6	122	4
73	F	MOGA2	#NAN	#NAN	#NAN	72.0	8.4	0.44	30.3	-4.8	0.39	5.5	1.41	22.8	1415	1.6	117	6
74	F	MOGA2	0.00E+00	9.330606062	3.24E-04	96.9	9.2	0.43	29.1	-3.7	0.38	5.6	1.46	29.0	1468	1.6	85	5
75	F	MOGA2	0.00E+00	8.512014597	2.89E-04	88.6	8.7	0.32	15.0	-4.6	0.32	5.2	1.36	26.9	1444	1.6	74	6
76	F	MOGA2	0.00E+00	10.57486857	3.69E-04	119.0	9.2	0.30	19.5	-4.6	0.34	5.1	1.38	26.0	1413	1.6	76	5
77	F	MOGA2	0.00E+00	10.1638972	3.42E-04	116.2	9.7	0.42	32.7	-4.5	0.34	6.0	1.43	28.9	1390	1.6	93	6
78	F	MOGA2	0.00E+00	10.72282054	4.00E-04	110.7	8.6	0.36	27.6	-4.3	0.33	5.4	1.51	25.4	1462	1.6	109	6
46	T	MOGA2	0.00E+00	7.874258693	2.35E-04	88.6	8.6	0.41	27.6	-4.7	0.36	6.5	1.30	27.2	1440	1.6	70	5
100	T	MOGA2	0.00E+00	7.874258693	2.35E-04	88.6	8.6	0.41	27.6	-4.7	0.36	6.5	1.30	27.2	1440	1.6	70	5
81	F	MOGA2	0.00E+00	11.00280003	4.11E-04	102.4	7.7	0.36	26.1	-4.4	0.33	5.1	1.45	27.3	1450	1.6	111	4
82	F	MOGA2	1.00E+00	#NAN	#NAN	116.2	8.7	0.34	30.9	-3.8	0.35	5.8	1.37	26.6	1440	1.6	114	4
456	T	MOGA2	0.00E+00	7.97465129	2.69E-04	83.0	9.4	0.33	24.6	-4.4	0.37	6.2	1.28	24.8	1424	1.6	70	6
84	F	MOGA2	0.00E+00	9.948030366	3.84E-04	88.6	8.5	0.32	22.5	-4.7	0.34	6.3	1.49	27.8	1468	1.6	112	5
85	F	MOGA2	0.00E+00	8.83531455	2.68E-04	91.3	7.6	0.41	20.7	-4.3	0.34	5.7	1.37	27.3	1480	1.6	88	5
86	F	MOGA2	0.00E+00	8.205838151	2.49E-04	88.6	8.7	0.43	28.5	-4.7	0.37	6.1	1.28	26.6	1440	1.6	73	6
16	T	MOGA2	0.00E+00	8.164915384	2.69E-04	88.6	8.7	0.41	28.5	-4.6	0.36	6.5	1.30	26.9	1444	1.6	74	6
88	F	MOGA2	0.00E+00	11.62824814	6.55E-04	119.0	9.4	0.43	23.7	-2.7	0.35	6.3	1.50	26.8	1472	1.6	127	6
107	T	MOGA2	0.00E+00	8.164915384	2.69E-04	88.6	8.7	0.41	28.5	-4.6	0.36	6.5	1.30	26.9	1444	1.6	74	6
90	F	MOGA2	0.00E+00	10.72182119	4.68E-04	102.4	8.2	0.43	24.3	-3.7	0.39	5.3	1.44	25.8	1407	1.6	118	5
91	F	MOGA2	#NAN	#NAN	#NAN	74.8	9.1	0.30	31.2	-3.4	0.34	5.1	1.57	24.8	1455	1.6	101	4
92	F	MOGA2	0.00E+00	10.56306517	3.52E-04	110.7	9.3	0.43	21.6	-2.5	0.34	5.2	1.30	26.6	1479	1.6	103	5
93	F	MOGA2	0.00E+00	8.982549871	2.84E-04	96.9	8.6	0.42	27.6	-3.7	0.36	6.5	1.39	29.1	1478	1.6	87	5
457	T	MOGA2	0.00E+00	8.193882628	2.84E-04	83.0	9.2	0.33	23.1	-4.8	0.38	6.2	1.28	25.8	1447	1.6	78	6
95	F	MOGA2	1.00E+00	#NAN	#NAN	85.8	8.1	0.31	17.7	-2.2	0.34	5.0	1.47	28.1	1389	1.6	122	4
96	F	MOGA2	0.00E+00	8.205838151	2.49E-04	88.6	8.7	0.43	28.5	-4.7	0.37	6.1	1.28	26.6	1440	1.6	73	6
97	F	MOGA2	0.00E+00	9.966973598	3.49E-04	99.6	9.4	0.42	30.3	-3.7	0.39	5.2	1.47	28.4	1471	1.6	94	5
87	T	MOGA2	0.00E+00	8.36608126	3.01E-04	85.8	9.2	0.30	16.5	-4.7	0.35	5.0	1.34	26.6	1407	1.6	74	5
99	F	MOGA2	#NAN	#NAN	#NAN	88.6	9.2	0.30	19.5	-4.6	0.33	6.3	1.49	27.8	1413	1.6	76	5
425	T	MOGA2	0.00E+00	8.536433322	3.34E-04	88.6	9.3	0.33	23.1	-4.2	0.38	6.2	1.29	26.2	1436	1.6	80	6
430	T	MOGA2	0.00E+00	8.536433322	3.34E-04	88.6	9.3	0.33	23.1	-4.2	0.38	6.2	1.29	26.2	1436	1.6	80	6
102	F	MOGA2	0.00E+00	10.93346455	4.16E-04	102.4	7.7	0.36	26.1	-4.4	0.33	5.1	1.45	29.6	1450	1.6	111	4
103	F	MOGA2	0.00E+00	10.16368087	3.51E-04	116.2	8.2	0.41	32.7	-3.2	0.34	5.7	1.43	28.9	1390	1.6	73	6
104	F	MOGA2	0.00E+00	11.38794759	5.43E-04	99.6	7.8	0.33	27.6	-3.0	0.34	6.1	1.52	27.2	1439	1.6	121	4
105	F	MOGA2	1.00E+00	#NAN	#NAN	116.2	8.7	0.34	30.9	-3.5	0.35	5.8	1.38	26.6	1440	1.6	114	4
106	F	MOGA2	0.00E+00	12.15737985	9.13E-04	107.9	9.5	0.42	26.1	-2.6	0.33	5.0	1.57	24.7	1471	1.6	130	6
442	T	MOGA2	0.00E+00	8.616224401	3.40E-04	88.6	9.1	0.33	20.4	-4.5	0.38	6.2	1.35	26.1	1436	1.6	81	6
108	F	MOGA2	0.00E+00	8.734541358	2.73E-04	96.9	7.8	0.43	28.8	-4.8	0.37	5.8	1.33	28.7	1446	1.6	84	5
109	F	MOGA2	0.00E+00	9.876054939	3.18E-04	105.1	8.7	0.39	22.2	-4.1	0.35	6.0	1.35	23.4	1480	1.6	98	6
110	F	MOGA2	0.00E+00	10.53512883	3.76E-04	113.4	8.1	0.31	19.5	-2.7	0.40	6.2	1.49	26.0	1436	1.6	108	5
111	F	MOGA2	1.00E+00	#NAN	#NAN	83.0	9.8	0.36	22.2	-2.3	0.35	5.5	1.43	24.5	1468	1.6	123	5
112	F	MOGA2	0.00E+00	8.622333603	2.77E-04	85.8	9.6	0.44	27.6	-2.1	0.34	5.1	1.41	27.7	1403	1.6	75	6
113	F	MOGA2	0.00E+00	10.40535253	3.76E-04	91.3	7.6	0.41	25.5	-3.9	0.38	5.4	1.52	29.4	1384	1.6	105	4
114	F	MOGA2	1.00E+00	#NAN	#NAN	74.8	8.5	0.32	29.7	-3.0	0.36	6.3	1.30	22.1	1417	1.6	114	4
115	F	MOGA2	0.00E+00	11.96337453	4.51E-04	130.0	9.3	0.39	15.9	-3.4	0.39	5.7	1.44	23.8	1456	1.6	88	5
116	F	MOGA2	#NAN	#NAN	#NAN	119.0	9.0	0.34	31.5	-4.7	0.32	5.3	1.57	26.6	1422	1.6	82	4
98	T	MOGA2	0.00E+00	8.770381104	3.03E-04	94.1	8.7	0.32	15.0	-4.8	0.32	5.1	1.33	27.1	1451	1.6	73	6
118	F	MOGA2	0.00E+00	8.342012173	2.41E-04	85.8	7.8	0.43	28.8	-4.8	0.37	5.8	1.33	28.7	1446	1.6	84	5
119	F	MOGA2	0.00E+00	10.14774543	3.29E-04	94.1	8.7	0.39	23.4	-4.0	0.35	5.5	1.36	23.4	1447	1.6	98	4
120	F	MOGA2	0.00E+00	11.3236546	4.53E-04	130.0	8.1	0.31	19.5	-2.7	0.40	6.2	1.49	26.0	1436	1.6	108	5
121	F	MOGA2	1.00E+00	#NAN	#NAN	83.0	9.8	0.36	31.8	-2.3	0.36	5.5	1.43	24.5	1468	1.6	123	5
122	F	MOGA2	0.00E+00	8.622333603	2.77E-04	85.8	9.6	0.44	27.6	-2.1	0.34	5.1	1.41	27.7	1403	1.6	75	6
123	F	MOGA2	0.00E+00	10.89445481	3.85E-04	110.7	7.6	0.41	25.5	-3.9	0.38	5.4	1.56	27.0	1384	1.6	105	4
124	F	MOGA2	1.00E+00	#NAN	#NAN	74.8	8.5	0.32	29.7	-3.0	0.36	6.3	1.30	22.1	1417	1.6	114	4
125	F	MOGA2	0.00E+00	10.28011081	3.69E-04	113.4	9.6	0.38	15.0	-3.4	0.38	5.8	1.43	24.2	1440	1.6	91	5
126	F	MOGA2	#NAN	#NAN	#NAN	119.0	9.0	0.										

137	F	MOGA2	0.00E+00	11.22509842	8.24E-04	110.7	8.4	0.36	18.9	-3.7	0.32	6.2	1.60	27.5	1390	1.6	130	6
138	F	MOGA2	0.00E+00	10.84191485	4.27E-04	119.0	9.8	0.37	24.0	-3.3	0.37	5.7	1.46	22.8	1453	1.6	92	5
139	F	MOGA2	0.00E+00	10.92181664	3.96E-04	119.0	7.6	0.41	25.5	-3.9	0.38	5.4	1.57	26.6	1439	1.6	108	5
140	F	MOGA2	0.00E+00	10.44143514	4.24E-04	105.1	8.7	0.39	22.2	-4.2	0.35	6.0	1.35	26.0	1447	1.6	115	6
141	F	MOGA2	0.00E+00	9.323120353	3.16E-04	102.4	9.1	0.40	24.0	-4.5	0.35	6.2	1.31	23.5	1474	1.6	84	6
94	T	MOGA2	0.00E+00	8.940719324	3.29E-04	102.4	9.3	0.36	23.4	-4.8	0.35	6.1	1.30	27.1	1429	1.6	76	5
143	F	MOGA2	0.00E+00	9.650197205	3.00E-04	99.6	8.3	0.43	15.6	-3.9	0.33	5.6	1.53	30.0	1397	1.6	98	5
144	F	MOGA2	0.00E+00	10.99716658	4.90E-04	119.0	8.5	0.35	21.9	-3.8	0.32	6.2	1.60	27.3	1397	1.6	121	6
145	F	MOGA2	0.00E+00	8.640679019	2.98E-04	85.8	9.6	0.45	27.0	-2.0	0.32	5.4	1.35	28.3	1396	1.6	81	6
146	F	MOGA2	#NAN	#NAN	#NAN	96.9	8.3	0.36	15.9	-3.5	0.32	6.2	1.60	26.4	1391	1.6	130	6
89	T	MOGA2	0.00E+00	9.135112482	3.32E-04	96.9	7.8	0.39	16.8	-4.6	0.35	5.6	1.39	29.1	1476	1.6	87	5
148	F	MOGA2	0.00E+00	9.64989031	3.00E-04	99.6	8.3	0.43	15.6	-3.9	0.33	5.6	1.53	30.0	1397	1.6	98	5
149	F	MOGA2	#NAN	#NAN	#NAN	119.0	9.6	0.35	21.9	-3.8	0.32	6.2	1.60	27.3	1389	1.6	81	6
150	F	MOGA2	0.00E+00	8.847649569	3.00E-04	91.3	9.4	0.45	31.8	-2.0	0.33	5.3	1.32	27.3	1393	1.6	83	6
151	F	MOGA2	0.00E+00	9.130664502	2.67E-04	96.9	8.3	0.31	15.9	-3.5	0.32	6.2	1.50	26.4	1391	1.6	91	6
152	F	MOGA2	#NAN	#NAN	#NAN	91.3	7.7	0.41	25.5	-3.9	0.38	5.4	1.52	29.4	1384	1.6	70	6
153	F	MOGA2	0.00E+00	9.320603031	2.65E-04	96.9	8.3	0.40	21.6	-3.9	0.36	6.0	1.35	22.5	1480	1.6	92	6
154	F	MOGA2	0.00E+00	9.650197205	3.00E-04	99.6	8.3	0.43	15.6	-3.9	0.33	5.6	1.53	30.0	1397	1.6	98	5
155	F	MOGA2	#NAN	#NAN	#NAN	105.1	8.2	0.37	18.0	-3.3	0.32	6.2	1.58	26.6	1386	1.6	117	6
156	F	MOGA2	#NAN	#NAN	#NAN	88.6	8.0	0.45	32.4	-5.0	0.38	5.9	1.28	29.4	1452	1.6	79	5
445	T	MOGA2	0.00E+00	9.414971969	3.72E-04	107.9	7.8	0.42	16.8	-2.8	0.39	6.4	1.53	28.0	1380	1.6	80	4
158	F	MOGA2	1.00E+00	#NAN	#NAN	88.6	7.8	0.45	30.0	-5.0	0.38	5.9	1.28	29.4	1460	1.6	99	5
159	F	MOGA2	0.00E+00	10.0129337	3.59E-04	91.3	7.9	0.40	22.2	-4.3	0.38	5.1	1.44	30.0	1380	1.6	111	5
157	T	MOGA2	0.00E+00	9.698759355	3.69E-04	91.3	7.6	0.40	24.9	-4.1	0.38	5.4	1.45	30.0	1381	1.6	106	5
428	T	MOGA2	0.00E+00	9.818658633	3.87E-04	110.7	9.1	0.40	17.1	-2.8	0.39	6.4	1.52	28.5	1380	1.6	84	4
162	F	MOGA2	0.00E+00	9.832875348	4.23E-04	94.1	7.8	0.39	25.5	-4.0	0.37	5.7	1.48	30.0	1392	1.6	106	5
163	F	MOGA2	0.00E+00	9.353310883	3.13E-04	105.1	9.5	0.41	23.4	-4.7	0.35	6.1	1.28	23.9	1470	1.6	70	6
164	F	MOGA2	0.00E+00	11.16165984	8.32E-04	107.9	8.4	0.36	18.9	-3.7	0.32	6.2	1.60	27.5	1390	1.6	130	6
369	F	MOGA2	#NAN	#NAN	#NAN	102.4	9.1	0.40	24.0	-4.5	0.35	6.2	1.31	23.6	1470	1.6	84	6
370	F	MOGA2	0.00E+00	10.19099045	3.31E-04	116.2	9.7	0.30	32.4	-2.2	0.40	6.4	1.41	24.8	1421	1.6	82	4
371	F	MOGA2	0.00E+00	8.329898324	2.68E-04	88.6	9.1	0.32	21.9	-4.6	0.38	6.2	1.28	26.2	1431	1.6	77	6
372	F	MOGA2	0.00E+00	10.20771486	3.33E-04	116.2	8.9	0.33	26.4	-4.4	0.32	5.2	1.34	26.3	1394	1.6	99	5
373	F	MOGA2	1.00E+00	#NAN	#NAN	130.0	8.6	0.33	31.2	-4.9	0.37	6.0	1.32	27.2	1405	1.6	94	4
374	F	MOGA2	0.00E+00	11.00542427	4.13E-04	130.0	8.3	0.37	24.0	-2.0	0.37	6.4	1.44	25.9	1401	1.6	92	5
375	F	MOGA2	0.00E+00	10.08332154	3.88E-04	96.9	8.1	0.33	24.9	-3.3	0.37	6.2	1.50	23.6	1411	1.6	113	6
376	F	MOGA2	0.00E+00	8.543705	2.67E-04	85.8	9.4	0.43	17.7	-3.1	0.32	5.9	1.35	29.0	1458	1.6	84	6
377	F	MOGA2	1.00E+00	#NAN	#NAN	113.4	7.9	0.41	30.0	-4.6	0.37	5.7	1.31	26.9	1452	1.6	101	6
378	F	MOGA2	#NAN	#NAN	#NAN	72.0	9.1	0.34	25.8	-2.5	0.35	5.9	1.37	29.0	1439	1.6	74	4
379	F	MOGA2	1.00E+00	#NAN	#NAN	116.2	9.2	0.43	15.6	-3.6	0.39	6.4	1.30	28.1	1422	1.6	93	4
380	F	MOGA2	0.00E+00	11.0443164	4.02E-04	130.0	9.7	0.30	32.4	-2.2	0.40	6.4	1.41	24.8	1421	1.6	82	4
381	F	MOGA2	1.00E+00	#NAN	#NAN	77.5	9.1	0.32	20.7	-4.7	0.38	5.2	1.28	26.2	1398	1.6	77	4
382	F	MOGA2	0.00E+00	11.0202984	4.12E-04	130.0	8.3	0.36	24.0	-2.0	0.37	6.4	1.44	25.9	1401	1.6	92	5
383	F	MOGA2	1.00E+00	#NAN	#NAN	130.0	8.6	0.33	31.2	-3.9	0.37	6.0	1.29	27.2	1402	1.6	94	4
384	F	MOGA2	1.00E+00	#NAN	#NAN	127.2	9.1	0.32	21.9	-4.6	0.38	6.2	1.28	26.2	1401	1.6	92	5
385	F	MOGA2	0.00E+00	11.1204086	4.04E-04	130.0	8.0	0.33	24.9	-3.3	0.37	6.4	1.44	25.9	1401	1.6	92	5
386	F	MOGA2	0.00E+00	10.08331482	3.88E-04	96.9	8.1	0.33	24.9	-3.3	0.37	6.2	1.50	23.6	1411	1.6	113	6
387	F	MOGA2	1.00E+00	#NAN	#NAN	113.4	7.9	0.41	30.0	-4.6	0.37	5.7	1.31	26.9	1452	1.6	101	6
388	F	MOGA2	0.00E+00	8.329898324	2.68E-04	88.6	9.1	0.32	21.9	-4.6	0.38	6.2	1.28	26.2	1431	1.6	77	6
389	F	MOGA2	1.00E+00	#NAN	#NAN	116.2	9.2	0.43	16.8	-3.1	0.39	6.4	1.29	28.2	1422	1.6	112	4
390	F	MOGA2	1.00E+00	#NAN	#NAN	77.5	9.1	0.32	20.7	-4.7	0.33	5.2	1.29	23.5	1398	1.6	77	4
391	F	MOGA2	0.00E+00	11.0202984	4.12E-04	130.0	8.3	0.36	24.0	-2.0	0.37	6.4	1.44	25.9	1401	1.6	92	5
392	F	MOGA2	1.00E+00	#NAN	#NAN	130.0	8.6	0.33	15.3	-4.0	0.35	6.0	1.29	27.2	1402	1.6	94	4
393	F	MOGA2	1.00E+00	#NAN	#NAN	127.2	9.1	0.32	21.9	-3.6	0.38	6.2	1.28	24.9	1401	1.6	93	5
394	F	MOGA2	1.00E+00	#NAN	#NAN	130.0	8.7	0.33	24.9	-3.3	0.37	6.4	1.39	25.9	1401	1.6	92	5
395	F	MOGA2	#NAN	#NAN	#NAN	88.6	9.1	0.32	21.9	-4.6	0.38	6.2	1.50	26.2	1431	1.6	77	6
396	F	MOGA2	1.00E+00	#NAN	#NAN	113.4	7.9	0.41	30.0	-4.6	0.37	6.0	1.31	26.9	1452	1.6	101	6
397	F	MOGA2	0.00E+00	8.77461092	2.87E-04	88.6	8.0	0.33	20.1	-4.6	0.38	6.2	1.28	26.2	1431	1.6	93	5
398	F	MOGA2	0.00E+00	9.819631103	3.24E-04	116.2	9.2	0.43	16.8	-3.1	0.39	6.4	1.50	28.2	1390	1.6	78	4
399	F	MOGA2	0.00E+00	10.78989881	4.32E-04	127.2	8.5	0.37	24.9	-2.8	0.37	6.4	1.46	25.8	1403	1.6	93	5
400	F	MOGA2	1.00E+00	#NAN	#NAN	130.0	8.6	0.33	15.3	-4.0	0.35	6.0	1.29	27.2	1402	1.6	94	4
401	F	MOGA2	1.00E+00	#NAN	#NAN	127.2	9.1	0.42	31.5	-3.8	0.38	6.2	1.28	26.2	1402	1.6	102	5
402	F	MOGA2	1.00E+00	#NAN	#NAN	130.0	8.3	0.33	24.9	-3.3	0.37	6.4	1.28	25.9	1433	1.6	93	5
403	F	MOGA2	1.00E+00	#NAN	#NAN	110.7	9.1	0.32	21.9	-4.7	0.38	6.2	1.29	26.2	1431	1.6	77	6
404	F	MOGA2	1.00E+00	#NAN	#NAN	113.4	7.9	0.41	30.0	-3.6	0.37	6.0	1.31</					

415	F	MOGA2	0.00E+00	9.056078708	2.68E-04	96.9	8.0	0.33	20.1	-4.6	0.38	6.2	1.28	23.6	1431	1.6	93	5
416	F	MOGA2	0.00E+00	7.910585808	2.50E-04	80.3	8.9	0.33	22.5	-4.4	0.38	6.2	1.28	25.0	1430	1.6	72	6
417	F	MOGA2	0.00E+00	8.755763333	2.89E-04	88.6	8.0	0.33	24.9	-4.6	0.38	6.2	1.28	26.2	1431	1.6	93	5
418	F	MOGA2	0.00E+00	8.929545749	2.77E-04	88.6	9.4	0.33	20.1	-4.6	0.38	6.2	1.29	26.2	1431	1.6	93	5
419	F	MOGA2	0.00E+00	10.58458951	3.85E-04	124.5	8.5	0.38	25.5	-3.4	0.38	6.3	1.41	25.2	1405	1.6	96	5
420	F	MOGA2	0.00E+00	8.905720377	2.69E-04	94.1	7.9	0.33	20.4	-5.0	0.37	6.3	1.28	23.9	1423	1.6	92	5
421	F	MOGA2	0.00E+00	8.015779979	2.65E-04	85.8	8.9	0.33	24.3	-4.4	0.38	6.2	1.28	24.9	1420	1.6	70	6
422	F	MOGA2	0.00E+00	8.914390376	2.79E-04	88.6	9.4	0.33	24.9	-4.6	0.38	6.2	1.29	26.2	1431	1.6	93	5
423	F	MOGA2	0.00E+00	8.722550955	2.59E-04	88.6	9.3	0.32	18.6	-4.3	0.38	6.2	1.31	26.5	1439	1.6	86	5
424	F	MOGA2	0.00E+00	8.329898324	2.68E-04	88.6	9.1	0.32	21.9	-4.6	0.38	6.2	1.28	26.2	1431	1.6	77	6
135	T	MOGA2	0.00E+00	9.921768511	4.27E-04	91.3	7.6	0.41	25.5	-3.9	0.38	5.4	1.52	29.4	1384	1.6	108	5
426	F	MOGA2	#NAN	#NAN	#NAN	88.6	7.8	0.32	24.3	-3.2	0.37	6.2	1.50	23.7	1415	1.6	112	5
427	F	MOGA2	0.00E+00	10.73298585	3.60E-04	127.2	8.5	0.37	24.9	-4.6	0.38	6.4	1.46	25.8	1403	1.6	93	5
142	T	MOGA2	0.00E+00	10.14735432	4.55E-04	94.1	7.6	0.40	25.5	-4.0	0.38	5.3	1.49	29.2	1380	1.6	110	5
429	F	MOGA2	0.00E+00	10.08527008	3.88E-04	96.9	8.1	0.33	24.9	-3.3	0.37	6.2	1.50	23.6	1411	1.6	113	6
79	T	MOGA2	0.00E+00	10.43646419	4.57E-04	102.4	9.0	0.36	22.2	-3.6	0.39	6.5	1.49	29.5	1473	1.6	112	5
431	F	MOGA2	0.00E+00	10.77381516	4.29E-04	121.7	7.8	0.32	24.3	-3.2	0.32	6.2	1.50	26.3	1415	1.6	112	5
432	F	MOGA2	#NAN	#NAN	#NAN	130.0	8.7	0.37	25.5	-4.5	0.38	6.3	1.53	26.4	1410	1.6	82	5
433	F	MOGA2	#NAN	#NAN	#NAN	105.1	8.9	0.38	17.7	-2.3	0.38	6.4	1.55	27.4	1380	1.6	75	4
434	F	MOGA2	#NAN	#NAN	#NAN	127.2	8.1	0.33	24.9	-3.3	0.37	6.2	1.46	25.8	1411	1.6	113	6
435	F	MOGA2	#NAN	#NAN	#NAN	77.5	7.8	0.30	24.9	-2.6	0.36	6.1	1.54	23.2	1417	1.6	124	6
436	F	MOGA2	#NAN	#NAN	#NAN	121.7	8.3	0.38	25.5	-2.7	0.37	6.4	1.44	25.4	1408	1.6	91	5
437	F	MOGA2	0.00E+00	9.648446966	3.16E-04	110.7	8.6	0.41	16.8	-2.9	0.39	6.4	1.53	29.1	1380	1.6	83	4
438	F	MOGA2	0.00E+00	10.30228726	3.53E-04	99.6	8.0	0.33	24.9	-3.2	0.37	6.5	1.50	24.0	1412	1.6	104	4
439	F	MOGA2	1.00E+00	#NAN	#NAN	74.8	8.9	0.33	22.5	-4.6	0.37	6.2	1.28	25.3	1427	1.6	76	6
80	T	MOGA2	0.00E+00	10.53808343	4.68E-04	102.4	8.2	0.30	28.2	-2.6	0.39	6.0	1.54	27.7	1430	1.6	115	6
441	F	MOGA2	1.00E+00	#NAN	#NAN	74.8	8.9	0.33	22.2	-4.6	0.37	6.2	1.28	25.3	1427	1.6	76	6
101	T	MOGA2	0.00E+00	10.70667797	4.70E-04	105.1	8.7	0.36	24.9	-3.7	0.38	6.2	1.49	27.7	1467	1.6	117	5
443	F	MOGA2	0.00E+00	9.496794742	2.99E-04	96.9	8.1	0.33	24.6	-2.9	0.37	6.1	1.48	23.8	1410	1.6	96	5
444	F	MOGA2	0.00E+00	10.86600479	4.25E-04	127.2	9.1	0.40	24.9	-2.8	0.37	6.4	1.46	25.8	1403	1.6	93	5
160	T	MOGA2	0.00E+00	10.88412004	6.23E-04	113.4	8.4	0.36	15.0	-3.7	0.32	6.4	1.54	26.4	1404	1.6	124	6
446	F	MOGA2	0.00E+00	10.8214943	4.24E-04	102.4	7.7	0.34	21.9	-3.2	0.36	6.4	1.52	23.8	1407	1.6	111	4
447	F	MOGA2	0.00E+00	7.931950702	2.53E-04	77.5	8.9	0.31	23.7	-4.4	0.38	6.2	1.31	24.2	1419	1.6	76	6
448	F	MOGA2	0.00E+00	8.43897522	2.78E-04	94.1	8.9	0.32	26.4	-4.6	0.38	6.3	1.30	26.0	1429	1.6	70	6
449	F	MOGA2	1.00E+00	#NAN	#NAN	85.8	9.1	0.40	17.1	-2.8	0.39	6.4	1.28	24.9	1380	1.6	84	4
450	F	MOGA2	#NAN	#NAN	#NAN	96.9	7.6	0.33	21.9	-3.3	0.35	6.4	1.58	23.7	1400	1.6	107	4
451	F	MOGA2	0.00E+00	8.639975213	2.83E-04	94.1	9.0	0.30	21.9	-4.5	0.38	6.3	1.29	23.3	1420	1.6	78	6
452	F	MOGA2	1.00E+00	#NAN	#NAN	94.1	7.7	0.34	21.9	-4.6	0.38	6.3	1.30	26.0	1429	1.6	109	4
453	F	MOGA2	0.00E+00	8.43897522	2.78E-04	94.1	8.9	0.32	26.4	-4.6	0.38	6.3	1.30	26.0	1429	1.6	70	6
454	F	MOGA2	0.00E+00	7.992273178	2.67E-04	85.8	8.6	0.37	24.9	-2.8	0.37	6.4	1.29	24.9	1420	1.6	70	6
455	F	MOGA2	0.00E+00	11.13076666	4.19E-04	96.9	7.7	0.33	24.9	-3.9	0.37	5.4	1.51	24.3	1403	1.6	113	4
117	T	MOGA2	0.00E+00	11.13862361	8.09E-04	110.7	8.4	0.35	17.7	-3.7	0.33	6.4	1.56	27.0	1395	1.6	129	6
147	T	MOGA2	0.00E+00	11.16155569	8.32E-04	107.9	8.4	0.36	18.9	-3.7	0.32	6.2	1.60	27.5	1390	1.6	130	6
458	F	MOGA2	0.00E+00	9.558402841	3.45E-04	110.7	7.6	0.32	24.3	-3.2	0.39	6.4	1.52	28.5	1380	1.6	84	4
459	F	MOGA2	0.00E+00	11.29935315	4.11E-04	130.0	8.0	0.31	25.8	-3.0	0.32	6.0	1.52	28.5	1421	1.6	98	6
460	F	MOGA2	0.00E+00	9.154448799	3.05E-04	102.4	7.6	0.32	24.3	-3.3	0.40	6.4	1.52	29.3	1380	1.6	82	4
461	F	MOGA2	0.00E+00	9.558402841	3.45E-04	110.7	7.6	0.32	24.3	-3.2	0.39	6.4	1.52	28.5	1380	1.6	84	4
462	F	MOGA2	0.00E+00	10.72240554	3.73E-04	127.2	8.5	0.38	27.3	-2.8	0.37	6.4	1.48	25.8	1396	1.6	97	5
463	F	MOGA2	#NAN	#NAN	#NAN	102.4	8.1	0.33	24.9	-3.4	0.38	6.4	1.60	24.4	1413	1.6	102	5
464	F	MOGA2	0.00E+00	8.988638833	3.08E-04	96.9	9.4	0.34	21.6	-4.4	0.40	6.2	1.33	26.9	1450	1.6	81	6
465	F	MOGA2	0.00E+00	10.9748383	4.33E-04	96.9	8.1	0.33	24.9	-3.3	0.39	6.4	1.51	23.6	1411	1.6	113	4
466	F	MOGA2	1.00E+00	#NAN	#NAN	88.6	7.8	0.32	24.3	-3.2	0.32	6.2	1.29	26.2	1420	1.6	112	5
83	T	MOGA2	0.00E+00	12.15713857	9.13E-04	107.9	9.5	0.42	26.1	-2.6	0.33	5.0	1.57	24.7	1471	1.6	130	6
468	F	MOGA2	1.00E+00	#NAN	#NAN	72.0	9.1	0.33	15.6	-3.5	0.38	5.7	1.35	26.1	1436	1.6	81	6
469	F	MOGA2	0.00E+00	9.717399457	3.40E-04	107.9	7.8	0.42	16.8	-2.8	0.39	6.4	1.50	28.0	1380	1.6	89	4
470	F	MOGA2	0.00E+00	9.80448361	3.19E-04	107.9	7.8	0.42	16.8	-2.8	0.39	6.4	1.50	28.0	1436	1.6	88	4
471	F	MOGA2	1.00E+00	#NAN	#NAN	96.9	8.1	0.30	15.3	-3.3	0.37	6.4	1.29	22.3	1411	1.6	113	5
472	F	MOGA2	0.00E+00	8.625765565	3.13E-04	91.3	9.3	0.33	23.1	-4.4	0.37	6.2	1.29	26.0	1437	1.6	79	6
473	F	MOGA2	0.00E+00	9.005133514	3.33E-04	88.6	9.1	0.33	20.4	-4.5	0.38	6.2	1.35	26.1	1436	1.6	84	4
474	F	MOGA2	0.00E+00	10.60418573	4.44E-04	116.2	7.6	0.34	23.4	-3.1	0.32	6.2	1.51	25.7	1426	1.6	112	5
475	F	MOGA2	0.00E+00	7.704718525	2.66E-04	77.5	8.8	0.33	21.9	-4.4	0.38	6.2	1.28	25.0	1412	1.6	72	6
476	F	MOGA2	0.00E+00	8.526177291	2.61E-04	88.6	9.1	0.34	20.1	-5.0	0.38	6.2	1.32	25.7	1434	1.6	82	6
477	F	MOGA2	#NAN	#NAN	#NAN	105.1	7.9	0.44	16.8	-2.8	0.39	6.4	1.56	27.8	1384</td			

Appendix G – Aircraft database

DB	Pos#	Nbrs	Nssed	QEW	MFW	MLW	RANGE	wS	wAR	wTR	wSweep	wSwple	wVisib	Kmt_pos	inc_pos	inc_kink	inc_kink	tc_tip	Centre	Crest	Chink	Cup	whAC	wdi	xle	wsSweat	Airp_Sweat	laps	CLMAX	CLMAX_TO	CLMAX_LD	VTeas	VTR	VTTR	VTsweep	HTeas	HTAR	HTTR	HTsweep	AngleWidth	ColHeight	ColTwid	If	Im	Itail	Isweat	file_width	fstDiam	fstEng	BPR	MMO	MMATE	DX_Pylon	DZ_Pylon	Plng	PHI	PWng	wtet	redund	Nsble													
44 to 70 pos	1	44	3	14301	24044	19836	19439	6048	1400	52.3	9.3	0.41	24.1	26.2	-4.1	0.37	2.0	0.1	-2.1	0.13	0.11	0.11	4.7	4.0	2.6	1.4	3.5	3.5	12.5	94.4	299.5	2.44	1.3	1.9	2.5	12.2	1.0	0.5	50.2	11.5	4.4	0.4	32.4	0.8	1.9	0.44	26.6	4.6	5.7	1.0	2.4	2.5	2.5	0.63	205.1	2.0	5.8	1.11	21.5	15.10	1.5	10003	0.0	0.0	0.81	340	39000	1	2	1	1	1	1
	2	50	4	13865	24105	19948	19549	5513	1400	48.3	9.3	0.41	25.1	27.2	-4.1	0.37	2.0	0.1	-2.1	0.13	0.11	0.11	4.6	3.8	2.5	1.3	3.4	3.5	11.8	85.8	289.0	2.33	1.3	1.9	2.5	11.8	1.0	0.5	50.2	11.1	4.4	0.4	33.4	0.4	2.0	0.44	25.0	4.8	5.6	1.0	2.7	2.8	2.9	0.67	203.2	2.1	6.2	1.17	21.5	15.10	1.5	10042	0.0	0.0	0.81	340	39000	1	2	1	1	1	1
	3	50	4	14018	24224	20104	19702	5513	1400	48.3	9.3	0.41	25.1	27.2	-4.1	0.37	2.0	0.1	-2.1	0.13	0.11	0.11	4.6	3.8	2.5	1.3	3.4	3.5	11.8	85.8	289.0	2.33	1.3	1.9	2.5	11.9	1.0	0.5	50.2	11.2	4.4	0.4	34.4	0.4	2.0	0.44	25.0	4.8	5.6	1.0	2.7	2.8	2.9	0.67	203.2	2.1	6.2	1.17	21.5	15.10	1.5	10528	0.0	0.0	0.81	340	39000	1	2	1	1	1	1
	4	50	3	15179	25716	21335	20908	6048	1400	52.3	9.3	0.41	24.1	26.2	-4.1	0.37	2.0	0.1	-2.1	0.13	0.11	0.11	4.7	4.9	2.6	1.4	3.5	3.5	11.4	94.4	314.1	2.44	1.3	1.9	2.5	10.6	1.0	0.4	4.4	32.3	0.8	1.9	0.44	28.1	4.6	5.6	1.0	2.7	2.8	2.9	0.67	203.2	2.1	6.2	1.17	21.5	15.10	1.5	10528	0.0	0.0	0.81	340	39000	1	2	1	1	1	1			
	5	60	4	18178	31390	26205	25681	7063	1600	70.0	9.3	0.40	23.4	25.5	-4.6	0.38	2.0	-0.1	-2.6	0.13	0.11	0.11	5.3	4.6	3.0	1.6	4.0	3.5	11.2	127.1	346.6	3.56	1.3	1.9	2.5	15.6	1.0	0.5	50.2	17.7	4.4	0.4	34.5	0.5	2.1	0.45	28.5	5.1	7.1	0.9	2.8	3.0	3.1	0.67	219.7	2.1	6.2	1.17	21.5	15.10	1.5	10280	-1.5	0.1	0.81	340	39000	1	1	1	1	1	1
	6	60	4	18624	31847	26669	26135	6948	1600	68.0	8.8	0.40	26.5	28.7	-4.5	0.39	2.0	0.2	-2.5	0.13	0.11	0.11	5.7	4.8	3.1	1.6	4.2	3.5	13.5	124.0	352.2	3.21	1.3	1.9	2.5	18.4	1.0	0.5	50.2	19.2	4.4	0.4	32.0	0.5	2.1	0.45	28.5	5.1	7.1	0.9	2.8	3.0	3.1	0.67	228.2	2.5	5.5	1.44	28.8	148.6	1.6	12692	0.0	0.0	0.81	340	39000	1	2	1	1	1	1
	7	60	4	18973	32344	27051	26509	7162	1600	70.0	9.3	0.40	23.4	25.5	-4.6	0.38	2.0	-0.1	-2.6	0.13	0.11	0.11	5.3	4.6	3.0	1.6	4.0	3.5	14.1	127.2	355.4	3.56	1.3	1.9	2.5	20.4	1.0	0.5	50.2	19.2	4.4	0.4	32.0	0.5	2.1	0.45	28.5	5.1	7.1	0.9	2.8	3.0	3.1	0.67	228.2	2.5	5.5	1.44	28.8	148.6	1.6	12692	0.0	0.0	0.81	340	39000	1	2	1	1	1	1
	8	72	4	2180	37256	31024	30504	8827	1800	77.5	8.8	0.42	27.7	29.7	-4.2	0.35	2.0	0.1	-2.2	0.13	0.11	0.11	5.9	5.1	3.3	1.8	4.4	3.0	11.7	142.4	381.3	3.97	1.3	1.9	2.5	15.7	0.5	0.5	50.2	18.8	4.4	0.4	35.6	0.9	2.0	0.44	30.2	5.0	6.5	1.0	2.9	3.0	3.1	0.67	228.2	2.5	5.5	1.44	29.0	148.0	1.7	14295	-1.4	0.1	0.81	340	38000	1	1	1	1	1	1
	9	74	4	21949	38461	31097	31269	8758	1830	76.4	8.8	0.46	30.1	31.9	-4.5	0.32	2.0	0.0	-2.5	0.13	0.11	0.11	5.9	5.0	3.3	1.9	3.9	3.5	13.9	135.9	395.7	4.42	1.2	1.8	2.4	14.2	1.0	0.5	50.2	16.7	4.4	0.4	37.8	0.8	2.0	0.46	30.9	5.2	6.2	0.9	2.8	3.0	3.2	0.67	256.2	2.5	5.4	1.39	28.6	150.0	1.8	14688	-1.3	0.1	0.84	340	39000	1	1	1	1	1	1
	10	80	4	22186	39355	32649	31996	10021	1800	79.2	8.9	0.40	25.0	27.2	-5.0	0.36	2.0	0.0	-3.0	0.13	0.11	0.11	5.8	5.0	3.3	1.7	4.3	3.0	11.5	144.0	408.0	3.96	1.3	1.9	2.5	13.9	0.5	0.5	50.2	16.8	4.4	0.4	33.1	0.8	2.0	0.46	31.7	5.2	6.2	0.9	2.8	3.0	3.2	0.67	264.0	2.5	5.5	1.39	29.3	148.6	1.8	14980	-1.4	0.1	0.83	340	41000	1	1	1	1	1	1
	11	77	5	21370	39512	31877	31239	11414	1700	91.5	8.3	0.33	22.3	25.2	-4.9	0.34	2.0	0.8	-2.9	0.13	0.11	0.11	6.1	5.2	3.9	1.7	4.4	3.0	14.9	156.2	445.5	4.91	1.3	1.9	2.5	24.7	0.5	0.5	50.2	31.3	4.4	0.4	30.7	0.5	2.0	0.46	31.0	6.1	7.8	0.9	2.8	3.0	3.2	0.67	289.2	2.4	5.4	1.34	23.1	1515	1.5	10522	-1.0	0.2	0.80	340	38000	1	1	1	1	1	1
	12	80	5	21492	39754	32264	31618	9851	1800	79.2	8.0	0.41	24.0	26.5	-4.8	0.37	2.0	0.3	-2.8	0.13	0.11	0.11	5.8	4.9	3.5	1.8	4.3	3.0	13.7	135.9	425.1	3.71	1.3	1.9	2.5	18.3	0.5	0.5	50.2	23.8	4.4	0.4	32.2	0.5	2.0	0.46	31.0	6.1	6.9	0.9	3.2	3.4	3.5	0.68	289.2	2.7	4.8	1.47	23.8	1486	1.7	14295	-1.4	0.1	0.82	340	41000	1	1	1	1	1	1
	13	80	5	21817	40188	32810	32154	13600	1800	102.8	7.7	0.45	25.1	27.3	-4.7	0.38	2.0	0.5	-2.7	0.13	0.11	0.11	6.7	5.8	4.0	2.3	5.1	3.0	15.0	183.3	463.4	4.63	1.3	1.9	2.5	31.5	1.0	0.5	50.2	20.6	4.4	0.4	33.2	0.5	2.0	0.46	31.0	6.1	7.8	0.9	3.2	3.4	3.5	0.67	289.2	2.6	5.5	1.47	27.3	1486	1.7	15289	-1.6	0.1	0.83	340	41000	1	1	1	1	1	1
	14	88	4	22953	40677	34361	33747	9247	1600	82.6	9.2	0.45	21.2	23.3	-3.3	0.33	2.0	0.9	-1.3	0.13	0.11	0.11	5.4	4.7	3.4	1.9	4.3	3.0	15.0	130.3	419.2	4.75	1.3	1.9	2.5	18.5	0.5	0.5	50.2	21.2	4.4	0.4	39.7	0.9	2.0	0.46	33.2	5.0	6.2	1.0	2.9	3.0	3.2	0.67	269.8	2.6	5.5	1.46	29.0	149.4	1.7	1412	-0.7	0.1	0.83	340	39000	1	1	1	1	1	1
	15	90	10	24977	41970	34601	34949	11449	1600	91.5	9.7	0.45	26.8	28.5	-3.9	0.33	2.0	0.1	-1.9	0.13	0.11	0.11	6.3	5.3	3.0	1.7	4.8	3.0	13.2	17.8	498.6	5.19	1.3	1.9	2.5	20.7	0.5	0.5	50.2	21.1	4.4	0.4	34.8	0.5	2.0	0.46	33.7	6.1	7.3	0.9	3.2	3.4	3.5	0.69	276.8	2.5	5.5	1.59	27.6	1458	1.7	1718	-1.3	0.2	0.80	340	38000	1	1	1	1	1	1
	16	90	5	25484	48801	39692	38899	11492	1800	94.4	8.5	0.40	29.8	31.9	-3.9	0.37	2.0	0.8	-2.3	0.13	0.11	0.11	7.0	6.0	3.7	1.9	4.3	3.0	13.0	174.9	407.4	4.84	1.2	1.8	2.4	16.6	0.5	0.5	50.2	21.2	4.4	0.4	37.5	0.9	2.0	0.44	36.6	5.0	6.8	1.0	2.9	3.0	3.1	0.58	291.4	2.8	4.8	1.57	27.2	1499	1.8	1875	-2.0	0.1	0.82	340	37000	1	1	1	1	1	1
	17	92	4	25164	47152	37660	36907	12626																																																																	

Appendix H– Optimization results

Optimum network and 3-aircraft fleet (20 airports)

Id	PARETO	Category	X1	X2	X3	DB#1 POS	DB#2 POS	DB#3 POS	MaxNPV	MaxNPV	IRr1	IRr2	IRr3	Prce1	Prce2	Price 3	COST	PROFIT	REVENUE	TOTPAX	TOTDIST	Nc1	Nc2	Nc3	ND1	ND2	ND3	Nn1	Nn2	Nn3
0	F	ULH	66%	72%	80%	5	18	13	12.2	4.1	30.5%	34.9%	34.5%	3.0902E+07	4.5717E+07	5.5799E+07	8.5512E+06	4.0647E+00	1.0465E+07	7.9278E+04	5.9380E+05	0.90	0.90	0.90	0.45	0.66	0.58	172	250	222
1	F	ULH	40%	89%	1%	#NAN	#NAN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	F	ULH	87%	60%	58%	7	15	9	11.0	3.9	30.9%	33.8%	34.3%	3.1318E+07	3.9353E+07	5.2045E+07	8.4341E+06	3.8953E+00	1.0370E+07	7.8563E+04	6.3270E+05	0.90	0.90	0.90	0.47	0.56	0.63	178	214	238
3	F	ULH	67%	19%	55%	5	5	9	11.6	3.9	30.5%	34.8%	34.3%	3.0902E+07	4.4129E+07	5.2045E+07	8.5338E+06	3.8786E+00	1.0407E+07	7.8842E+04	6.1262E+05	0.90	0.90	0.90	0.45	0.58	0.62	172	222	236
4	F	ULH	60%	11%	84%	5	3	13	12.2	4.1	30.5%	35.0%	34.5%	3.0902E+07	4.5245E+07	5.5799E+07	8.1291E+06	4.1177E+00	9.8493E+06	7.4616E+04	5.5987E+05	0.90	0.90	0.90	0.45	0.54	0.58	172	204	222
5	F	ULH	84%	67%	27%	6	17	5	10.9	3.3	31.0%	32.8%	34.6%	3.1770E+07	3.6240E+07	5.4340E+07	8.4712E+06	3.2790E+00	1.0032E+07	7.6003E+04	6.2646E+05	0.90	0.90	0.90	0.44	0.50	0.65	166	190	246
6	F	ULH	1%	53%	11%	1	13	2	11.2	3.7	28.4%	34.7%	35.1%	2.4227E+07	4.0970E+07	5.6390E+07	7.9603E+06	3.7222E+00	9.5680E+06	7.2485E+04	5.9588E+05	0.90	0.90	0.90	0.45	0.58	0.62	172	222	196
7	F	ULH	46%	34%	42%	4	9	7	11.6	4.0	28.7%	34.3%	34.8%	2.4217E+07	3.8150E+07	6.4764E+07	9.1230E+06	4.0050E+00	1.1140E+07	8.4392E+04	5.9668E+05	0.90	0.90	0.90	0.41	0.55	0.73	154	210	278
8	F	ULH	33%	92%	75%	3	23	12	10.6	4.1	29.3%	33.4%	34.3%	2.5738E+07	3.8908E+07	5.5433E+07	8.2840E+06	4.0537E+00	1.0068E+07	7.6274E+04	5.7704E+05	0.90	0.90	0.90	0.44	0.44	0.65	166	166	246
9	F	ULH	18%	84%	92%	2	21	14	10.6	3.8	28.4%	34.0%	34.2%	2.4381E+07	3.9993E+07	5.5623E+07	8.9852E+06	3.7623E+00	1.1049E+07	8.3706E+04	6.5540E+05	0.90	0.90	0.90	0.45	0.59	0.68	170	226	258
10	F	ULH	43%	29%	90%	4	8	14	10.7	3.5	28.7%	34.5%	34.2%	2.4217E+07	3.9010E+07	5.5623E+07	8.9724E+06	3.4525E+00	1.0830E+07	8.2045E+04	6.5577E+05	0.90	0.90	0.90	0.41	0.52	0.68	154	196	258
11	F	ULH	22%	21%	32%	2	6	5	10.4	3.1	28.4%	33.8%	34.6%	2.4381E+07	3.7336E+07	5.4340E+07	8.4476E+06	3.1313E+00	9.9739E+06	7.5560E+04	6.4511E+05	0.90	0.90	0.90	0.45	0.50	0.65	170	190	246
12	F	ULH	3%	38%	94%	1	10	15	10.3	3.5	28.4%	34.6%	34.0%	2.4227E+07	4.0237E+07	5.0557E+07	8.4005E+06	3.4672E+00	1.0140E+07	7.6815E+04	6.5297E+05	0.90	0.90	0.90	0.45	0.52	0.64	172	196	244
13	F	ULH	50%	1%	69%	4	1	11	10.9	3.3	28.7%	34.0%	35.0%	2.4217E+07	3.8293E+07	5.7064E+07	7.8491E+06	3.3228E+00	1.0914E+07	8.0322E+04	5.4281E+05	0.90	0.90	0.90	0.41	0.45	0.59	154	172	224
14	F	ULH	15%	56%	65%	2	14	10	11.5	3.9	28.4%	35.8%	34.1%	2.4381E+07	4.7382E+07	5.3056E+07	8.5282E+06	3.9150E+00	1.0397E+07	7.8762E+04	6.0592E+05	0.90	0.90	0.90	0.45	0.59	0.61	170	224	230
15	F	ULH	82%	44%	37%	6	11	6	13.3	4.5	31.0%	35.1%	34.9%	3.1770E+07	4.5734E+07	6.4699E+07	8.5467E+06	1.0443E+07	7.9112E+04	5.3670E+05	0.90	0.90	0.90	0.43	0.58	0.72	164	222	272	
16	F	ULH	76%	33%	8%	6	8	2	11.7	4.3	31.0%	33.8%	35.1%	3.1770E+07	4.7301E+07	5.6390E+07	8.4788E+06	4.2937E+00	1.0936E+07	9.0836E+04	6.8815E+05	0.90	0.90	0.90	0.44	0.52	0.62	166	196	198
17	F	ULH	78%	25%	73%	6	7	11	11.7	3.8	31.0%	33.6%	35.0%	3.1770E+07	3.8513E+07	5.7064E+07	8.7034E+06	3.7905E+00	9.2404E+06	7.0003E+04	5.4157E+05	0.90	0.90	0.90	0.44	0.50	0.59	166	190	224
18	F	ULH	27%	41%	19%	2	10	3	11.3	3.6	28.4%	34.6%	34.7%	2.4381E+07	4.0237E+07	5.9454E+07	8.6639E+06	3.6024E+00	1.0378E+07	7.8619E+04	6.0513E+05	0.90	0.90	0.90	0.45	0.52	0.68	170	196	258
19	F	ULH	70%	48%	79%	5	12	12	12.4	4.3	30.5%	35.5%	34.3%	3.0902E+07	4.7136E+07	5.5433E+07	8.3505E+06	4.2617E+00	1.0194E+07	7.7225E+04	5.6005E+05	0.90	0.90	0.90	0.45	0.58	0.65	172	222	246
20	F	ULH	7%	4%	25%	1	1	4	11.1	3.6	28.4%	33.7%	34.8%	2.4227E+07	3.8293E+07	6.8606E+07	8.3416E+06	3.0377E+00	7.8616E+04	5.9265E+05	0.90	0.90	0.90	0.45	0.45	0.68	172	172	258	
21	F	ULH	97%	66%	99%	7	16	15	12.0	4.2	30.9%	35.4%	34.0%	3.1318E+07	4.8031E+07	5.0557E+07	8.4327E+06	4.1697E+00	1.0418E+07	7.8922E+04	6.0321E+05	0.90	0.90	0.90	0.47	0.60	0.63	178	228	238
22	F	ULH	36%	9%	21%	3	3	4	12.3	3.7	29.3%	35.4%	34.8%	2.5738E+07	4.7542E+07	6.0775E+07	8.7214E+06	3.6661E+00	1.0397E+07	7.8768E+04	5.8038E+05	0.90	0.90	0.90	0.44	0.54	0.68	166	204	258
23	F	ULH	57%	83%	62%	#NAN	#NAN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
24	F	ULH	25%	78%	52%	2	19	8	10.7	3.9	28.4%	34.2%	34.5%	2.4381E+07	4.0408E+07	5.3894E+07	8.4832E+06	3.8644E+00	1.0387E+07	7.8688E+04	6.2601E+05	0.90	0.90	0.90	0.45	0.59	0.61	170	224	230
25	F	ULH	54%	16%	34%	4	4	6	12.3	4.5	28.7%	34.9%	34.9%	2.4217E+07	4.4098E+07	6.4696E+07	8.7695E+06	4.5199E+00	1.0752E+07	8.1451E+04	5.3839E+05	0.90	0.90	0.90	0.41	0.49	0.73	154	186	276
26	F	ULH	47%	97%	49%	4	24	8	11.6	3.7	28.7%	35.9%	34.5%	2.4217E+07	4.6109E+07	5.3894E+07	8.4854E+06	3.6594E+00	1.0165E+07	7.7011E+04	5.9614E+05	0.90	0.90	0.90	0.41	0.57	0.61	154	216	230
27	F	ULH	92%	75%	5%	7	18	1	11.9	3.8	30.9%	34.9%	34.3%	2.4217E+07	4.5713E+07	5.2566E+07	8.6663E+06	3.8046E+00	1.0551E+07	7.9932E+04	6.1973E+05	0.90	0.90	0.90	0.47	0.66	0.58	178	250	222
28	F	ULH	94%	59%	15%	7	15	3	11.8	4.0	30.9%	33.8%	34.7%	3.1318E+07	3.9353E+07	5.9454E+07	8.5785E+06	3.9784E+00	1.0463E+07	7.9267E+04	5.9764E+05	0.90	0.90	0.90	0.47	0.56	0.68	178	214	258
29	F	ULH	12%	95%	44%	1	23	7	11.4	4.5	28.4%	33.4%	34.8%	2.4227E+07	3.8908E+07	5.4764E+07	8.7747E+06	4.5022E+00	1.0823E+07	8.1994E+04	5.5493E+05	0.90	0.90	0.90	0.45	0.44	0.73	172	166	278
30	F	MOGA2	83%	72%	80%	6	18	13	12.3	4.1	31.0%	34.9%	34.5%	3.1770E+07	4.5717E+07	5.5799E+07	8.4850E+06	4.1292E+00	1.0382E+07	7.8653E+04	5.8417E+05	0.90	0.90	0.90	0.44	0.66	0.58	166	250	222
31	F	MOGA2	40%	90%	9%	3	22	2	11.2	4.3	29.3%	35.5%	35.1%	2.5738E+07	4.1017E+07	5.6390E+07	7.2936E+06	4.2883E+00	8.7422E+06	6.6229E+04	5.1006E+05	0.90	0.90	0.90	0.44	0.44	0.52	166	198	238
32	F	MOGA2	87%	16%	58%	7	4	9	11.6	4.3	30.9%	34.3%	34.3%	3.1318E+07	4.0498E+07	5.2045E+07	8.1429E+06	4.2962E+00	1.0033E+07	7.6006E+04	5.7877E+05	0.90	0.90	0.90	0.47	0.49	0.63	178	238	239
33	F	MOGA2	82%	19%	55%	6	5	9	11.8	3.9	31.0%	34.8%	34.3%	3.1770E+07	4.4129E+07	5.2045E+07	8.4713E+06	3.9157E+00	1.0317E+07	7.8157E+04	6.0299E+05	0.90	0.90	0.90	0.44	0.58	0.62	166	222	236
34	F	MOGA2	66%	11%</																										

51	F	MOGA2	76%	53%	13%	6	13	2	12.0	4.1	31.0%	34.2%	35.1%	3.1770E+07	4.0970E+07	5.6390E+07	7.8357E+06	4.0717E+00	9.4872E+06	7.1873E+04	5.6435E+05	0.90	0.90	0.90	0.44	0.58	0.52	166	222	196	
52	F	MOGA2	45%	25%	73%	4	7	11	11.0	3.4	28.7%	34.3%	35.0%	2.4217E+07	3.8513E+07	5.7064E+07	7.9748E+06	3.3819E+00	9.3221E+06	7.0622E+04	5.6412E+05	0.90	0.90	0.90	0.41	0.50	0.59	154	190	224	
53	F	MOGA2	57%	33%	62%	5	20	10	11.6	5.0	30.5%	34.9%	34.1%	3.0902E+07	4.3313E+07	5.3056E+07	7.6552E+06	5.0009E+00	9.5027E+06	7.1990E+04	5.1316E+05	0.90	0.90	0.90	0.45	0.47	0.61	172	178	230	
54	F	MOGA2	81%	60%	68%	#NAN	#NAN	#NAN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
55	F	MOGA2	78%	25%	73%	#NAN	#NAN	#NAN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
56	F	MOGA2	85%	3%	49%	#NAN	#NAN	#NAN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
57	F	MOGA2	72%	21%	72%	6	6	11	11.5	3.3	31.0%	33.3%	35.0%	3.1770E+07	3.7336E+07	5.7064E+07	8.0118E+06	3.2964E+00	9.3316E+06	7.0694E+04	5.6637E+05	0.90	0.90	0.90	0.44	0.50	0.59	166	190	224	
58	F	MOGA2	100%	77%	0%	#NAN	#NAN	#NAN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
59	F	MOGA2	65%	41%	89%	#NAN	#NAN	#NAN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
60	F	MOGA2	91%	96%	76%	#NAN	#NAN	#NAN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
61	F	MOGA2	40%	90%	13%	3	22	2	11.2	4.3	29.3%	33.5%	35.1%	2.5738E+07	4.1017E+07	5.6390E+07	7.2936E+06	4.2883E+00	8.7422E+06	6.6229E+04	5.1006E+05	0.90	0.90	0.90	0.44	0.44	0.52	166	166	198	
62	F	MOGA2	100%	15%	63%	7	4	10	11.6	4.5	30.9%	34.3%	34.1%	3.1318E+07	4.4098E+07	5.3056E+07	8.0202E+06	4.5451E+00	9.9304E+06	7.5230E+04	5.5866E+05	0.90	0.90	0.90	0.47	0.49	0.61	178	186	230	
63	F	MOGA2	82%	44%	37%	6	11	6	13.3	4.5	31.0%	35.1%	34.9%	3.1770E+07	4.5734E+07	6.4696E+07	8.5456E+06	4.4656E+00	1.0443E+07	7.9112E+04	5.3670E+05	0.90	0.90	0.90	0.43	0.58	0.72	164	222	272	
64	F	MOGA2	66%	11%	78%	5	3	12	12.1	4.1	30.5%	35.0%	34.3%	3.0902E+07	4.5245E+07	5.5433E+07	8.3405E+06	4.0827E+00	1.0141E+07	7.6827E+04	5.7408E+05	0.90	0.90	0.90	0.45	0.54	0.65	172	204	246	
65	F	MOGA2	81%	63%	76%	6	16	12	12.6	4.8	31.0%	35.4%	34.3%	3.1770E+07	4.8031E+07	5.5433E+07	8.2652E+06	4.7618E+00	1.0300E+07	7.8031E+04	5.4764E+05	0.90	0.90	0.90	0.44	0.60	0.64	166	228	244	
66	F	MOGA2	76%	66%	72%	6	16	11	13.0	4.3	31.0%	35.4%	35.0%	3.1770E+07	4.8031E+07	5.7064E+07	8.0083E+06	4.2838E+00	9.6557E+06	7.3149E+04	5.2570E+05	0.90	0.90	0.90	0.44	0.60	0.58	166	228	222	
67	F	MOGA2	77%	49%	61%	6	12	10	12.2	4.2	31.0%	35.5%	34.1%	3.1770E+07	4.7135E+07	5.3056E+07	8.1951E+06	4.1812E+00	9.9603E+06	7.5457E+04	5.5950E+05	0.90	0.90	0.90	0.44	0.58	0.61	166	222	230	
68	F	MOGA2	46%	64%	65%	#NAN	#NAN	#NAN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
69	F	MOGA2	73%	47%	52%	6	12	8	12.4	4.0	31.0%	35.5%	34.5%	3.1770E+07	4.7135E+07	5.3894E+07	8.1988E+06	4.0449E+00	9.8954E+06	7.4965E+04	5.5950E+05	0.90	0.90	0.90	0.44	0.58	0.61	166	222	230	
70	F	MOGA2	63%	33%	85%	5	8	13	11.3	4.1	30.5%	33.8%	34.5%	3.0902E+07	3.9010E+07	5.5799E+07	8.1002E+06	4.0665E+00	9.8481E+06	7.4607E+04	5.7612E+05	0.90	0.90	0.90	0.45	0.52	0.58	172	196	222	
71	F	MOGA2	95%	29%	43%	7	7	7	12.2	4.6	30.9%	33.6%	34.8%	3.1318E+07	3.8513E+07	6.4764E+07	8.6875E+06	4.5774E+00	1.0777E+07	8.1642E+04	5.5906E+05	0.90	0.90	0.90	0.47	0.50	0.73	178	190	278	
72	F	MOGA2	64%	37%	60%	5	9	9	10.8	3.7	30.5%	33.5%	34.3%	3.0902E+07	3.8150E+07	5.2045E+07	8.4758E+06	3.7455E+00	1.0369E+07	7.8553E+04	6.4345E+05	0.90	0.90	0.90	0.45	0.55	0.63	172	210	238	
73	F	MOGA2	75%	16%	71%	6	4	11	12.3	3.8	31.0%	34.3%	35.0%	3.1770E+07	4.0498E+07	5.7064E+07	8.7107E+06	3.7689E+00	9.3072E+06	7.0509E+04	5.2551E+05	0.90	0.90	0.90	0.44	0.49	0.59	166	224	222	
74	F	MOGA2	82%	29%	51%	6	7	8	11.2	4.2	31.0%	33.6%	34.5%	3.1770E+07	3.8513E+07	5.3894E+07	8.0855E+06	4.1898E+00	9.9187E+06	7.5142E+04	5.8228E+05	0.90	0.90	0.90	0.44	0.50	0.61	166	190	232	
75	F	MOGA2	94%	56%	0%	#NAN	#NAN	#NAN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
76	F	MOGA2	76%	33%	8%	6	8	2	11.7	4.3	31.0%	33.8%	35.1%	3.1770E+07	3.9010E+07	5.6390E+07	7.4981E+06	4.2937E+00	9.0836E+06	6.8815E+04	5.3998E+05	0.90	0.90	0.90	0.44	0.52	0.52	166	196	198	
77	F	MOGA2	82%	56%	55%	6	14	9	12.2	4.0	31.0%	35.4%	34.3%	3.1770E+07	4.7382E+07	5.2045E+07	8.4643E+06	3.9551E+00	1.0308E+07	7.8091E+04	5.9696E+05	0.90	0.90	0.90	0.44	0.59	0.62	166	224	236	
78	F	MOGA2	67%	52%	76%	5	13	12	11.5	3.8	30.5%	34.2%	34.3%	3.0902E+07	4.0970E+07	5.5433E+07	8.6115E+06	3.8468E+00	1.0479E+07	7.9386E+04	6.1150E+05	0.90	0.90	0.90	0.45	0.58	0.65	172	222	246	
79	F	MOGA2	74%	70%	41%	6	17	7	11.9	4.4	31.0%	32.8%	34.8%	3.1770E+07	3.6240E+07	6.4764E+07	8.7302E+06	4.3988E+00	1.0738E+07	8.1345E+04	5.6100E+05	0.90	0.90	0.90	0.44	0.50	0.73	166	190	278	
80	F	MOGA2	77%	0%	100%	#NAN	#NAN	#NAN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
81	F	MOGA2	70%	43%	49%	5	11	8	12.1	3.7	30.5%	35.1%	34.5%	3.0902E+07	4.5734E+07	5.3894E+07	8.4658E+06	3.6561E+00	1.0141E+07	7.6828E+04	5.9649E+05	0.90	0.90	0.90	0.45	0.59	0.61	172	224	230	
82	F	MOGA2	84%	75%	45%	6	18	7	13.2	4.7	31.0%	34.9%	34.8%	3.1770E+07	4.5717E+07	6.4764E+07	8.7175E+06	3.0887E+00	8.2475E+04	5.5796E+05	0.90	0.90	0.90	0.43	0.65	0.72	164	248	272		
83	F	MOGA2	57%	57%	76%	5	14	9	12	12.4	4.3	30.5%	35.4%	34.3%	3.0902E+07	4.7382E+07	5.5433E+07	8.4569E+06	4.3219E+00	1.0406E+07	7.8835E+04	5.7212E+05	0.90	0.90	0.90	0.45	0.59	0.65	172	224	246
84	F	MOGA2	81%	60%	77%	6	15	12	11.4	4.1	31.0%	33.8%	34.3%	3.1770E+07	3.9353E+07	5.5433E+07	8.4130E+06	4.0215E+00	1.0297E+07	7.8101E+04	5.9328E+05	0.90	0.90	0.90	0.44	0.56	0.65	166	214	246	
85	F	MOGA2	78%	25%	73%	6	7	11	11.7	3.8	31.0%	33.6%	35.0%	3.1770E+07	3.8513E+07	7.8034E+06	3.9240E+00	5.4157E+05	0.90	0.90	0.90	0.44	0.50	0.59	166	190	224				
86	F	MOGA2	85%	2%	49%	#NAN	#NAN	#NAN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
87	F	MOGA2	58%	57%	5%	5	14	12	12.4	4.3	30.5%	35.4%	34.3%	3.0902E+07	4.7382E+07	5.5433E+07	8.4569E+06	4.3219E+00	1.0406E+07	7.8835E+04	5.7212E+05	0.90	0.90	0.90	0.45	0.58	0.65	172	224	246	
88	F	MOGA2	100%	77%	0%	#NAN	#NAN	#NAN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
89	F	MOGA2	65%	41%	89%	5	10	14	11.4	3.7	30.5%	34.1%	34.2%	3.0902E+07	4.0237E+07	5.5623E+07	8.7069E+06	3.7354E+00	1.0591E+07	8.0232E+04	6.2855E+05	0.90	0.90	0.90	0.45	0.52	0.68	172	196		

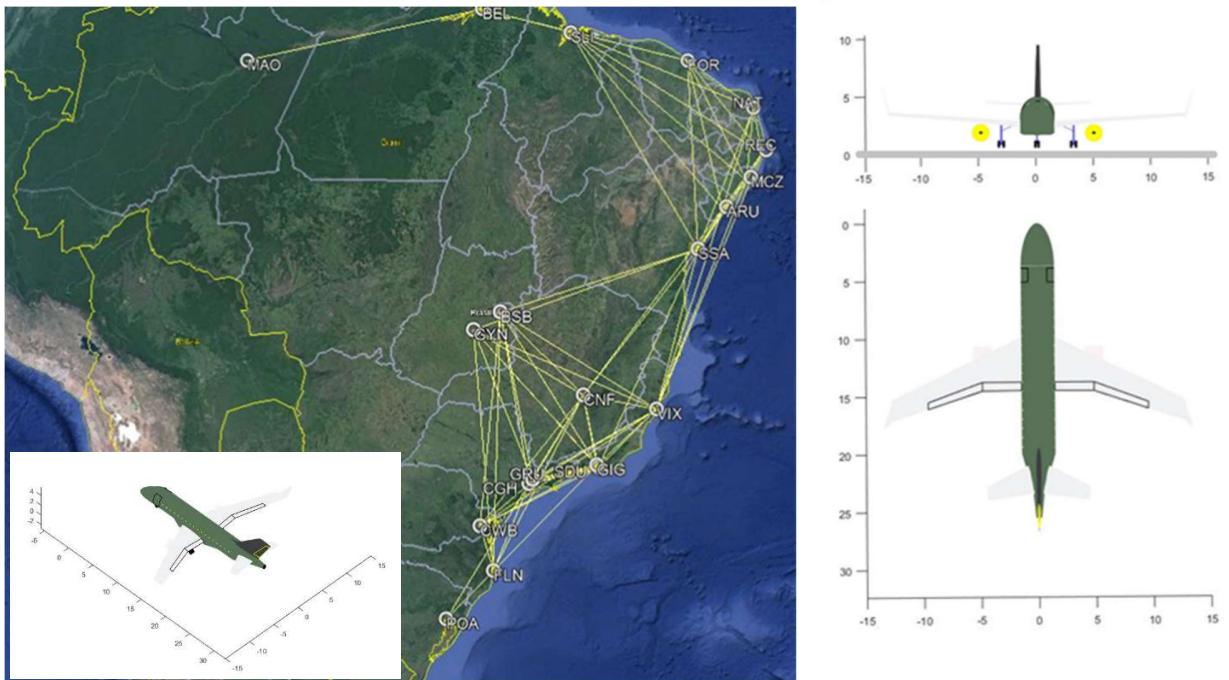
110	F	MOGA2	70%	48%	45%	5	12	7	13.4	4.6	30.5%	35.5%	34.8%	3.0902e+07	4.7135e+07	6.4764e+07	8.6091e+06	4.5543e+00	1.0558e+07	7.9983e+04	5.3495e+05	0.90	0.90	0.90	0.45	0.58	0.72	170	220	274
111	F	MOGA2	84%	75%	45%	6	18	7	13.2	4.7	31.0%	34.9%	34.8%	3.1770e+07	4.5717e+07	6.4764e+07	8.7175e+06	4.7139e+00	1.0887e+07	8.2475e+04	5.5796e+05	0.90	0.90	0.90	0.43	0.65	0.72	164	248	278
112	T	MOGA2	81%	83%	77%	6	20	12	12.0	5.0	31.0%	34.9%	34.3%	3.1770e+07	4.3313e+07	5.5433e+07	7.7530e+06	5.0239e+00	9.5901e+06	7.2652e+04	5.0269e+05	0.90	0.90	0.90	0.44	0.47	0.65	166	178	246
113	F	MOGA2	74%	51%	34%	6	13	6	12.7	4.2	31.0%	34.2%	34.9%	3.1770e+07	4.0970e+07	6.4699e+07	8.7754e+06	4.2375e+00	1.0714e+07	8.1163e+04	5.6352e+05	0.90	0.90	0.90	0.44	0.58	0.73	166	222	276
114	T	MOGA2	85%	2%	45%	6	1	7	12.2	4.9	31.0%	33.2%	34.8%	3.1770e+07	3.8293e+07	6.4764e+07	8.4919e+06	4.9179e+00	1.0554e+07	7.9956e+04	5.2446e+05	0.90	0.90	0.90	0.44	0.45	0.73	166	172	227
115	F	MOGA2	67%	74%	67%	5	18	11	12.5	3.8	30.5%	34.9%	35.0%	3.0902e+07	4.5717e+07	5.7064e+07	8.3793e+06	3.8457e+00	1.0067e+07	7.6267e+04	5.7550e+05	0.90	0.90	0.90	0.45	0.66	0.58	172	250	222
116	F	MOGA2	100%	77%	2%	7	19	1	11.2	3.9	30.9%	33.8%	34.3%	3.1318e+07	4.0608e+07	5.2565e+07	8.3612e+06	3.9073e+00	1.0199e+07	7.7267e+04	6.0882e+05	0.90	0.90	0.90	0.47	0.59	0.58	178	224	222
117	F	MOGA2	58%	81%	89%	5	20	14	11.8	4.7	30.5%	34.9%	34.2%	3.0902e+07	4.3313e+07	5.5623e+07	8.0656e+06	4.7236e+00	9.9927e+06	7.5702e+04	5.3892e+05	0.90	0.90	0.90	0.45	0.47	0.68	172	178	258
118	F	MOGA2	48%	29%	6%	4	7	1	10.4	4.0	28.7%	34.3%	34.3%	2.4217e+07	3.8513e+07	5.2565e+07	7.9953e+06	4.0111e+00	7.9240e+06	7.3667e+04	5.8505e+05	0.90	0.90	0.90	0.41	0.50	0.58	154	190	218
119	F	MOGA2	55%	60%	71%	4	15	11	11.1	3.3	28.7%	34.5%	35.0%	2.4217e+07	3.9353e+07	5.7064e+07	8.3300e+06	3.2712e+00	9.7650e+06	7.3977e+04	5.9298e+05	0.90	0.90	0.90	0.41	0.56	0.59	154	214	224
120	F	MOGA2	51%	48%	96%	4	12	15	11.3	3.4	28.7%	36.0%	34.0%	2.4217e+07	4.7135e+07	5.0557e+07	8.8256e+06	3.4019e+00	1.0556e+07	7.9971e+04	6.3612e+05	0.90	0.90	0.90	0.41	0.56	0.64	154	222	222
121	F	MOGA2	67%	30%	95%	5	8	15	10.7	3.6	30.5%	33.8%	34.0%	3.0902e+07	5.0557e+07	8.4817e+06	3.5845e+00	1.0286e+07	7.7922e+04	6.4589e+05	0.90	0.90	0.90	0.45	0.52	0.64	172	196	244	
122	F	MOGA2	5%	43%	8%	1	11	2	11.9	3.7	28.4%	35.5%	35.1%	2.4227e+07	4.5734e+07	5.6390e+07	7.9764e+06	3.7308e+00	9.5105e+06	7.2049e+04	5.7071e+05	0.90	0.90	0.90	0.45	0.58	0.52	172	224	196
123	F	MOGA2	78%	89%	24%	6	22	4	12.0	3.9	31.0%	33.0%	34.8%	3.1770e+07	4.1017e+07	6.0775e+07	8.5457e+06	3.8670e+00	1.0201e+07	7.7277e+04	5.5379e+05	0.90	0.90	0.90	0.44	0.68	166	166	258	
124	F	MOGA2	73%	50%	47%	6	12	8	12.4	4.0	31.0%	35.5%	34.5%	3.1770e+07	4.7135e+07	5.3894e+07	8.1988e+06	4.0449e+00	9.8954e+06	7.4965e+04	5.5950e+05	0.90	0.90	0.90	0.44	0.58	0.61	166	222	230
125	F	MOGA2	14%	32%	75%	2	8	12	10.6	3.8	28.4%	34.2%	34.3%	2.4381e+07	3.9010e+07	5.5433e+07	8.4538e+06	3.8323e+00	1.0278e+07	7.7865e+04	6.1284e+05	0.90	0.90	0.90	0.45	0.52	0.67	196	246	246
126	F	MOGA2	94%	46%	52%	7	12	8	12.4	3.8	30.5%	35.5%	34.5%	3.1318e+07	4.7135e+07	5.3894e+07	8.3295e+06	3.8455e+00	1.0141e+07	7.5861e+04	5.7732e+05	0.90	0.90	0.90	0.47	0.58	0.61	178	222	230
127	F	MOGA2	38%	60%	86%	3	15	13	10.9	3.8	29.3%	34.2%	34.5%	2.5738e+07	3.9353e+07	5.5799e+07	8.3802e+06	3.7902e+00	1.0146e+07	7.6863e+04	6.0611e+05	0.90	0.90	0.90	0.44	0.56	0.58	166	214	222
128	F	MOGA2	38%	7%	42%	#NAN	#NAN	#NAN	N/A	N/A	N/A	N/A	N/A	3.1318e+07	3.8153e+07	6.0775e+07	8.6397e+06	3.8005e+00	1.0410e+07	7.8866e+04	5.9073e+05	0.90	0.90	0.90	0.47	0.50	0.68	178	190	258
129	F	MOGA2	92%	25%	20%	7	7	4	11.9	3.8	30.5%	33.6%	34.8%	3.1318e+07	3.8153e+07	6.0775e+07	8.6397e+06	3.8005e+00	1.0410e+07	7.8866e+04	5.9073e+05	0.90	0.90	0.90	0.47	0.50	0.68	178	190	258
130	F	MOGA2	29%	1%	51%	#NAN	#NAN	#NAN	N/A	N/A	N/A	N/A	N/A	3.1318e+07	4.0107e+07	6.0775e+07	8.5457e+06	3.8670e+00	1.0201e+07	7.7277e+04	5.5379e+05	0.90	0.90	0.90	0.44	0.68	166	166	258	
131	F	MOGA2	19%	3%	69%	2	1	11	10.8	3.5	28.4%	33.7%	35.0%	2.4381e+07	3.8293e+07	5.7064e+07	7.8031e+06	3.4837e+00	9.1183e+06	6.9078e+04	4.6545e+05	0.90	0.90	0.90	0.45	0.55	0.59	170	172	224
132	F	MOGA2	37%	52%	54%	3	13	9	10.8	3.4	29.3%	34.7%	34.3%	2.5738e+07	3.0907e+07	5.2045e+07	8.7597e+06	3.4393e+00	9.0139e+06	6.5986e+04	5.9090e+05	0.90	0.90	0.90	0.44	0.55	0.63	166	222	238
133	F	MOGA2	24%	59%	4%	2	15	1	10.4	3.9	28.4%	34.2%	34.3%	2.4381e+07	3.9353e+07	5.2565e+07	8.2188e+06	3.9070e+00	1.0049e+07	7.6125e+04	6.1520e+05	0.90	0.90	0.90	0.45	0.56	0.58	170	214	242
134	F	MOGA2	32%	47%	79%	3	12	12	12.0	3.8	29.3%	35.8%	34.3%	2.5738e+07	4.7135e+07	5.5433e+07	8.5548e+06	3.7814e+00	1.0257e+07	7.7707e+04	5.7939e+05	0.90	0.90	0.90	0.44	0.58	0.65	166	222	248
135	F	MOGA2	34%	42%	4%	3	11	1	11.5	3.5	29.3%	35.5%	34.3%	2.5738e+07	4.5734e+07	5.2565e+07	8.4556e+06	3.4936e+00	1.0052e+07	7.6154e+04	6.0015e+05	0.90	0.90	0.90	0.44	0.59	0.68	166	224	222
136	F	MOGA2	43%	55%	13%	3	14	2	12.3	4.0	29.3%	35.8%	35.1%	2.5738e+07	4.7382e+07	5.6390e+07	7.9381e+06	4.0421e+00	9.5513e+06	7.2358e+04	5.5156e+05	0.90	0.90	0.90	0.44	0.59	0.62	166	224	196
137	F	MOGA2	42%	85%	73%	3	21	11	11.2	3.6	29.3%	34.0%	35.0%	2.5738e+07	3.9993e+07	5.7064e+07	8.2630e+06	3.5392e+00	9.8204e+06	7.4397e+04	5.8271e+05	0.90	0.90	0.90	0.44	0.59	0.68	166	226	226
138	F	MOGA2	31%	66%	79%	3	16	12	12.0	4.3	29.3%	35.8%	34.3%	2.5738e+07	4.8031e+07	5.5433e+07	8.4913e+06	4.3471e+00	1.0461e+07	7.9252e+04	5.7179e+05	0.90	0.90	0.90	0.44	0.60	0.64	166	228	244
139	F	MOGA2	25%	87%	12%	2	21	2	11.0	4.5	28.4%	34.0%	35.1%	2.4381e+07	3.9693e+07	5.6390e+07	7.7964e+06	4.4623e+00	9.6615e+06	7.3193e+04	5.7105e+05	0.90	0.90	0.90	0.45	0.59	0.52	170	226	196
140	F	MOGA2	56%	94%	35%	4	23	6	11.5	4.3	28.7%	33.7%	34.9%	2.4217e+07	3.8089e+07	6.4669e+07	8.8119e+06	4.2750e+00	1.0711e+07	8.1146e+04	5.4753e+05	0.90	0.90	0.90	0.41	0.44	0.73	154	166	224
141	F	MOGA2	45%	62%	31%	4	15	5	10.7	3.2	28.7%	34.5%	34.6%	2.4217e+07	3.9353e+07	5.4340e+07	8.8013e+06	3.2257e+00	1.0473e+07	7.9340e+04	6.5314e+05	0.90	0.90	0.90	0.41	0.56	0.65	154	214	246
142	F	MOGA2	37%	4%	89%	3	2	14	12.0	3.6	29.3%	35.6%	34.2%	2.5738e+07	4.9117e+07	5.5623e+07	8.7934e+06	3.5969e+00	1.0537e+07	7.9825e+04	6.0724e+05	0.90	0.90	0.90	0.44	0.49	0.68	166	188	258
143	F	MOGA2	62%	3%	52%	5	1	8	11.0	4.3	30.5%	33.2%	34.5%	3.0902e+07	3.8293e+07	5.3894e+07	7.9628e+06	4.3317e+00	9.7688e+06	7.4006e+04	5.6338e+05	0.90	0.90	0.90	0.45	0.61	0.72	172	172	232
144	F	MOGA2	95%	94%	55%	7	23	9	10.8	4.2	30.9%	33.0%	34.3%	3.1318e+07	3.8908e+07	5.2045e+07	8.0415e+06	4.1552e+00	9.4552e+06	7.4817e+04	5.9004e+05	0.90	0.90	0.90	0.47	0.44	0.63	178	166	238
145	F	MOGA2	64%	57%	14%	5	14	3	12.9	4.3	30.5%	35.4%	34.7%	3.0902e+07	4.7382e+07	5.9454e+07	8.5374e+06	4.2609e+00	1.0464e+07	7.9133e+04	5.5693e+05	0.90	0.90	0.90	0.45	0.59	0.68	172	224	224
146	F	MOGA2	28%	65%	43%	2	16	7	12.8	4.9	28.4%	35.8%	34.8%	2.4381e+07	4.7135e+07	6.4764e+07	8.5921e+06	4.8994e+00	1.0745e+07	7.6977e+04	5.3977e+05	0.90	0.90	0.90	0.44	0.59	0.72	166	226	272
147	F	MOGA2	62%	69%	52%	5	17	8	10.7	3.7	30.5%	32.8%	34.5%	3.0902e+07	3.6240e+07	5.3894e+07	8.2996e+06	3.6776e+00	1.0016e+07	7.5879e+04	6.1508e+05	0.90	0.90	0.90	0.45	0.50	0.62	172	178	258
148	F	MOGA2	56%	67%	37%	4	17	6	11.3	3.7	28.7%	33.6%	34.9%	2.4217e+07	3.6240e+07	6.4699e+07	8.0798e+06	3.7481e+00	1.0090e+07	8.2644e+04	5.9051e+05	0.90	0.90	0.						

171	F	MOGA2	61%	62%	31%	5	15	5	11.2	3.6	30.5%	33.8%	34.6%	3.0902E+07	3.9353E+07	5.4340E+07	8.5658E+06	3.5514E+00	1.0318E+07	7.8164E+04	6.3107E+05	0.90	0.90	0.90	0.45	0.56	0.65	172	214	246
172	F	MOGA2	37%	4%	89%	3	2	14	12.0	3.6	29.3%	35.6%	34.2%	2.5738E+07	4.9117E+07	5.5623E+07	8.7934E+06	3.5969E+00	1.0537E+07	7.9825E+04	6.0724E+05	0.90	0.90	0.90	0.44	0.49	0.68	166	188	258
173	F	MOGA2	63%	37%	77%	5	9	12	11.1	3.8	30.5%	33.5%	34.3%	3.0902E+07	3.8150E+07	5.5433E+07	8.5859E+06	3.7685E+00	1.0443E+07	7.9117E+04	6.2301E+05	0.90	0.90	0.90	0.45	0.55	0.65	172	210	246
174	F	MOGA2	78%	76%	40%	6	19	7	12.5	4.7	31.0%	33.8%	34.8%	3.1770E+07	4.0608E+07	6.4764E+07	8.6457E+06	4.6708E+00	1.0751E+07	8.1444E+04	5.5333E+05	0.90	0.90	0.90	0.43	0.59	0.72	165	223	275
175	F	MOGA2	43%	49%	0%	#NAN	#NAN	#NAN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
176	F	MOGA2	28%	65%	47%	2	16	8	11.8	4.1	28.4%	35.8%	34.5%	2.4381E+07	4.8031E+07	5.3894E+07	8.4613E+06	4.0774E+00	1.0356E+07	7.8456E+04	5.9234E+05	0.90	0.90	0.90	0.45	0.60	0.60	170	228	228
177	F	MOGA2	75%	85%	53%	6	21	8	11.3	4.3	31.0%	33.5%	34.5%	3.1770E+07	3.9993E+07	5.3894E+07	8.2470E+06	4.3145E+00	1.0212E+07	7.7367E+04	5.8881E+05	0.90	0.90	0.90	0.44	0.59	0.61	166	226	230
178	F	MOGA2	99%	86%	52%	7	21	8	11.3	4.1	30.9%	33.5%	34.5%	3.1318E+07	3.9993E+07	5.3894E+07	8.3761E+06	4.1162E+00	1.0330E+07	7.8259E+04	6.0662E+05	0.90	0.90	0.90	0.47	0.59	0.61	178	226	230
179	F	MOGA2	69%	37%	87%	5	9	14	11.1	3.6	30.5%	33.5%	34.2%	3.0902E+07	3.8150E+07	5.5623E+07	8.9162E+06	6.3428E+00	1.0887E+07	8.2476E+04	6.5592E+05	0.90	0.90	0.90	0.45	0.58	0.68	172	210	258
180	F	MOGA2	73%	72%	80%	6	18	13	12.3	4.1	31.0%	34.9%	34.5%	3.1770E+07	4.5717E+07	5.5799E+07	8.4850E+06	4.1292E+00	1.0382E+07	7.8685E+04	5.8417E+05	0.90	0.90	0.90	0.44	0.66	0.58	166	250	222
181	F	MOGA2	62%	69%	60%	5	17	10	10.5	3.9	30.5%	32.8%	34.1%	3.0902E+07	3.6240E+07	5.3056E+07	8.2373E+06	3.8828E+00	1.0042E+07	7.6078E+04	6.1104E+05	0.90	0.90	0.90	0.45	0.50	0.61	172	190	232
182	F	MOGA2	90%	56%	54%	7	14	9	12.2	3.8	30.9%	35.4%	34.3%	3.1318E+07	4.7382E+07	5.2045E+07	8.5934E+06	3.7737E+00	1.0426E+07	7.8983E+04	6.1478E+05	0.90	0.90	0.90	0.47	0.59	0.62	178	224	236
183	F	MOGA2	64%	57%	14%	5	14	3	12.9	4.3	30.5%	35.4%	34.7%	3.0902E+07	4.7382E+07	5.9454E+07	8.5374E+06	4.2609E+00	1.0446E+07	7.9133E+04	5.6593E+05	0.90	0.90	0.90	0.45	0.58	0.68	172	224	258
184	F	MOGA2	94%	20%	53%	7	5	8	11.9	3.9	30.9%	34.8%	34.5%	3.1318E+07	4.4129E+07	5.3894E+07	8.4138E+06	3.8537E+00	1.0176E+07	7.7090E+04	5.9311E+05	0.90	0.90	0.90	0.47	0.58	0.61	178	222	230
185	F	MOGA2	69%	62%	45%	5	15	7	12.2	4.5	30.5%	33.8%	34.8%	3.0902E+07	3.9353E+07	6.4764E+07	8.7130E+06	4.5475E+00	1.0817E+07	8.1948E+04	5.6464E+05	0.90	0.90	0.90	0.45	0.56	0.73	172	214	276
186	F	MOGA2	84%	14%	52%	6	4	8	11.8	4.6	31.0%	34.3%	34.5%	3.1770E+07	4.4098E+07	5.3894E+07	7.8965E+06	4.6260E+00	9.9473E+06	7.3812E+04	5.4084E+05	0.90	0.90	0.90	0.44	0.49	0.61	166	186	230
187	F	MOGA2	75%	25%	61%	6	7	10	11.0	4.3	31.0%	33.6%	34.1%	3.1770E+07	3.8513E+07	5.3056E+07	8.0813E+06	4.3328E+00	9.9908E+06	7.5688E+04	5.8228E+05	0.90	0.90	0.90	0.44	0.58	0.61	166	190	232
188	F	MOGA2	55%	68%	44%	4	17	7	11.3	3.9	28.7%	33.6%	34.8%	2.4217E+07	3.6240E+07	6.4764E+07	9.0656E+06	3.9300E+00	1.0999E+07	8.3329E+04	5.9051E+05	0.90	0.90	0.90	0.41	0.50	0.73	154	190	278
189	F	MOGA2	62%	59%	26%	5	15	4	11.9	4.0	30.5%	33.8%	34.8%	3.0902E+07	3.9353E+07	6.0775E+07	8.6222E+06	4.0285E+00	1.0514E+07	7.9648E+04	5.8946E+05	0.90	0.90	0.90	0.45	0.56	0.68	172	214	258
190	F	MOGA2	43%	95%	38%	4	23	6	11.5	4.3	28.7%	33.7%	34.9%	2.4217E+07	3.8908E+07	6.4699E+07	8.8119E+06	4.2750E+00	1.0711E+07	8.1146E+04	5.4753E+05	0.90	0.90	0.90	0.41	0.44	0.73	154	166	278
191	F	MOGA2	24%	87%	12%	2	21	2	11.0	4.5	28.4%	34.0%	35.1%	2.4381E+07	3.9993E+07	5.6390E+07	7.7964E+06	4.4623E+00	9.6615E+06	7.3193E+04	5.7105E+05	0.90	0.90	0.90	0.45	0.59	0.52	170	226	196
192	F	MOGA2	32%	57%	14%	3	14	3	12.5	4.0	29.3%	35.8%	34.7%	2.5738E+07	4.7382E+07	5.9454E+07	8.6587E+06	4.0011E+00	1.0489E+07	7.9462E+04	5.7568E+05	0.90	0.90	0.90	0.44	0.59	0.68	166	224	258
193	F	MOGA2	49%	54%	40%	4	14	6	12.9	4.4	28.7%	36.0%	34.9%	2.4217E+07	4.7382E+07	6.4699E+07	8.8284E+06	4.3846E+00	1.0807E+07	8.1871E+04	5.5119E+05	0.90	0.90	0.90	0.41	0.59	0.72	154	224	274
194	F	MOGA2	72%	54%	0%	#NAN	#NAN	#NAN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
195	F	MOGA2	73%	85%	67%	6	21	11	11.8	4.1	31.0%	33.5%	35.0%	3.1770E+07	3.9993E+07	5.7064E+07	7.9515E+06	4.0647E+00	9.5744E+06	7.2533E+04	5.5045E+05	0.90	0.90	0.90	0.44	0.59	0.58	166	226	222
196	F	MOGA2	100%	6%	21%	7	2	4	13.2	4.1	30.9%	35.2%	34.8%	3.1318E+07	4.9117E+07	6.0775E+07	8.5154E+06	4.0657E+00	1.0249E+07	7.7641E+04	5.4905E+05	0.90	0.90	0.90	0.47	0.49	0.68	178	188	258
197	F	MOGA2	59%	71%	21%	#NAN	#NAN	#NAN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
198	F	MOGA2	64%	69%	13%	5	17	2	11.1	3.8	30.5%	32.8%	35.1%	3.0902E+07	3.6240E+07	5.6390E+07	7.6767E+06	3.8105E+00	9.1758E+06	6.9514E+04	5.6597E+05	0.90	0.90	0.90	0.45	0.50	0.54	172	190	204
199	F	MOGA2	73%	60%	21%	6	15	4	12.0	4.0	31.0%	33.8%	34.8%	3.1770E+07	3.9353E+07	6.0775E+07	8.5849E+06	4.0364E+00	1.0447E+07	7.9147E+04	5.8300E+05	0.90	0.90	0.90	0.44	0.56	0.68	166	214	258
200	F	MOGA2	86%	70%	10%	7	17	2	11.2	3.6	30.9%	32.8%	35.1%	3.1318E+07	3.6240E+07	5.6390E+07	7.7559E+06	3.6209E+00	9.2107E+06	6.9778E+04	5.7579E+05	0.90	0.90	0.90	0.47	0.50	0.54	178	190	204
201	F	MOGA2	63%	57%	13%	5	14	2	12.7	4.2	30.5%	35.4%	35.1%	3.0902E+07	4.7382E+07	5.6390E+07	7.9428E+06	4.1584E+00	9.6050E+06	7.2765E+04	5.4932E+05	0.90	0.90	0.90	0.45	0.59	0.52	172	224	196
202	F	MOGA2	100%	100%	0%	#NAN	#NAN	#NAN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
203	F	MOGA2	43%	48%	0%	#NAN	#NAN	#NAN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
204	F	MOGA2	94%	85%	47%	7	16	8	12.5	4.4	30.9%	35.4%	34.5%	3.1318E+07	4.8031E+07	5.3894E+07	8.2678E+06	4.4066E+00	1.0208E+07	7.7332E+04	5.6929E+05	0.90	0.90	0.90	0.47	0.60	0.60	178	228	228

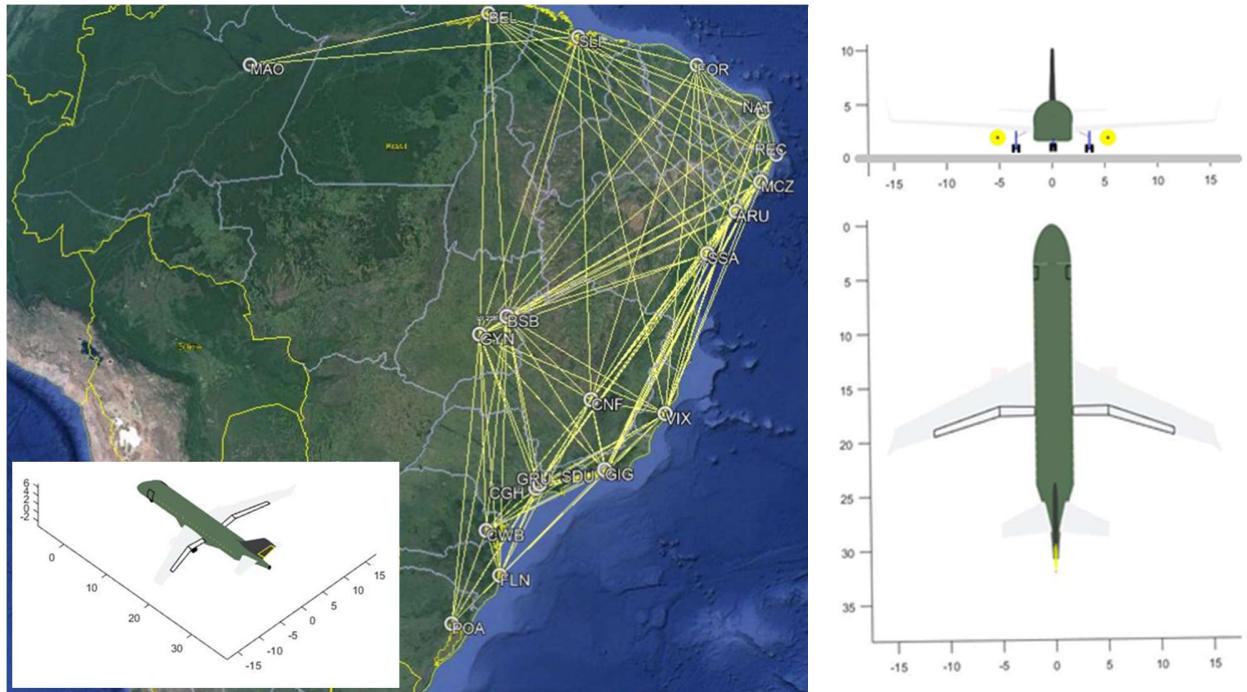
Appendix I - Optimum network and 3-aircraft fleet characteristics (20 Airports)

Maximum NP

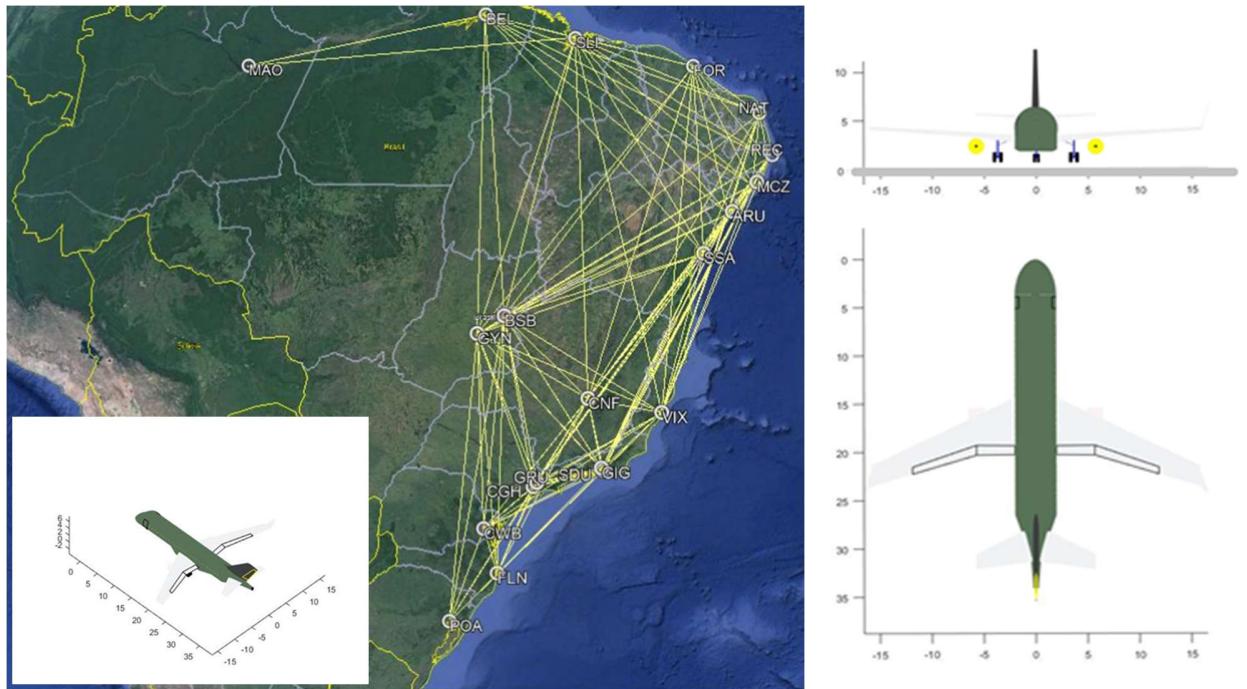
NETWORK FREQUENCIES AND CHARACTERISTICS (Max NP/ACFT#1)																			AIRCRAFT DATA				
		Arrival Airport																	Npax-Nseat	60-4			
		AJU	BEL	BSB	CGH	CNF	CWB	FLN	FOR	GIG	GRU	GYN	MAO	MCZ	NAT	POA	REC	SDU	SLI	SSA	VIX	MTOW[kg]	32,344
Departure Airport	AJU	0	0	0	0	1	0	0	1	0	0	0	0	1	1	0	1	0	1	1	0	wS [m ²]	70.0
	BEL	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	wAR	9.3
	BSB	0	0	0	3	1	2	1	0	2	3	0	0	0	0	0	0	3	0	2	1	wTR	0.40
	CGH	0	0	3	0	3	3	2	0	3	0	0	0	0	0	0	3	0	4	0	0	wSweep [°]	23.35
	CNF	1	0	1	3	0	2	1	0	2	2	1	0	0	0	2	0	2	0	2	0	wTwist [°]	-4.6
	CWB	0	0	2	3	2	0	1	0	2	0	0	0	0	0	0	0	3	0	0	1	Kink	0.38
	FLN	0	0	1	2	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	BPR	5.50
	FOR	1	1	0	0	0	0	0	0	0	0	0	0	2	1	0	2	0	0	0	2	eDiam [m]	1.44
	GIG	0	0	2	3	2	2	0	0	0	3	2	0	0	0	2	0	0	0	0	1	OPR	28.8
	GRU	0	0	3	0	2	0	0	0	3	0	2	0	0	0	0	0	3	0	0	1	FPR	1.6
	GYN	0	0	0	0	1	0	1	0	2	2	0	0	0	0	0	0	2	0	1	0	eITT [K]	1488
	MAO	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Range [nm]	1600
	MCZ	1	0	0	0	0	0	0	0	2	0	0	0	0	1	0	1	0	1	1	1	Cruise Mach	0.743
	NAT	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	1	1	0	CO2 Eff[kg/pax]	99.1
	POA	0	0	0	3	2	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	NETWORK DATA	
	REC	1	0	0	0	0	0	0	2	0	0	0	0	1	1	0	0	0	1	2	0	n	20
	SDU	0	0	3	4	2	3	0	0	0	3	2	0	0	0	0	0	0	3	1	0	N	166
	SLI	1	1	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	0	0	0	L	434.2
	SSA	1	0	2	0	2	0	0	2	2	0	1	0	1	1	0	0	2	3	0	0	ADON	7.7
	VIX	0	0	1	1	0	1	0	0	1	1	0	0	1	0	0	0	1	0	1	0	ND	0.44
Acum freq		7	3	18	22	19	14	7	9	19	14	9	1	8	6	8	8	21	5	18	8	Aci	0.90



NETWORK FREQUENCIES AND CHARACTERISTICS (Max NP/ACFT#2)																		AIRCRAFT DATA					
		Arrival Airport																Npax-Nseat	100-5				
		AJU	BEL	BSB	CGH	CNF	CWB	FLN	FOR	GIG	GRU	GYN	MAO	MCZ	NAT	POA	REC	SDU	SLI	SSA	VIX	MTOW[kg]	45,029
Departure Airport	AJU	0	0	2	0	1	0	0	2	2	0	1	0	1	1	0	1	2	1	1	1	wS [m ²]	96.0
	BEL	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	1	0	0	wAR	9.6
	BSB	2	0	0	3	2	2	1	0	2	3	0	0	0	0	0	0	3	0	2	1	wTR	0.38
	CGH	0	0	3	0	3	3	2	0	3	0	3	0	0	0	0	3	0	4	0	0	wSweep [°]	30.33
	CNF	1	0	2	3	0	2	1	0	2	2	1	0	2	0	2	0	2	0	2	1	wTwist [°]	-4.5
	CWB	0	0	2	3	2	0	1	0	2	3	2	0	0	0	0	2	0	3	0	0	Kink	0.34
	FLN	0	0	1	2	1	1	0	0	2	2	1	0	0	0	0	1	0	2	0	0	BPR	3.04
	FOR	2	2	0	0	0	0	0	0	0	0	0	0	2	2	0	2	0	2	2	0	eDiam [m]	1.18
	GIG	2	0	2	3	2	2	2	0	0	3	2	0	0	0	2	0	0	0	2	1	OPR	18.2
	GRU	0	0	3	0	2	3	2	0	3	0	2	0	0	0	0	3	0	3	0	3	FPR	1.3
	GYN	1	0	0	3	1	2	1	0	2	2	0	0	0	0	0	0	2	0	2	1	eITT [K]	1582
	MAO	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Range [nm]	1000
	MCZ	1	0	0	0	2	0	0	0	2	0	0	0	0	0	1	0	1	0	1	2	Cruise Mach	0.723
	NAT	1	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	1	0	1	2	CO2 Eff [kg/pax]	119.3
	POA	0	0	0	3	2	2	1	0	2	3	0	0	0	0	0	0	3	0	0	0	NETWORK DATA	
	REC	1	0	0	0	0	0	0	0	2	0	0	0	0	1	1	0	0	0	1	2	n	20
	SDU	2	0	3	4	2	3	2	0	0	3	2	0	0	0	3	0	0	0	3	1	N	178
	SLI	1	1	0	0	0	0	0	2	0	0	0	0	0	1	1	0	1	0	2	0	L	459.6
	SSA	1	0	2	0	2	0	0	2	2	3	2	0	0	2	2	0	2	3	2	0	ADON	8.3
	VIX	1	0	1	2	1	1	1	0	1	1	1	0	1	0	0	1	1	0	1	0	ND	0.47
Acum freq		16	4	21	26	23	21	14	14	23	25	17	1	11	8	16	9	28	9	26	14	Aci	0.9

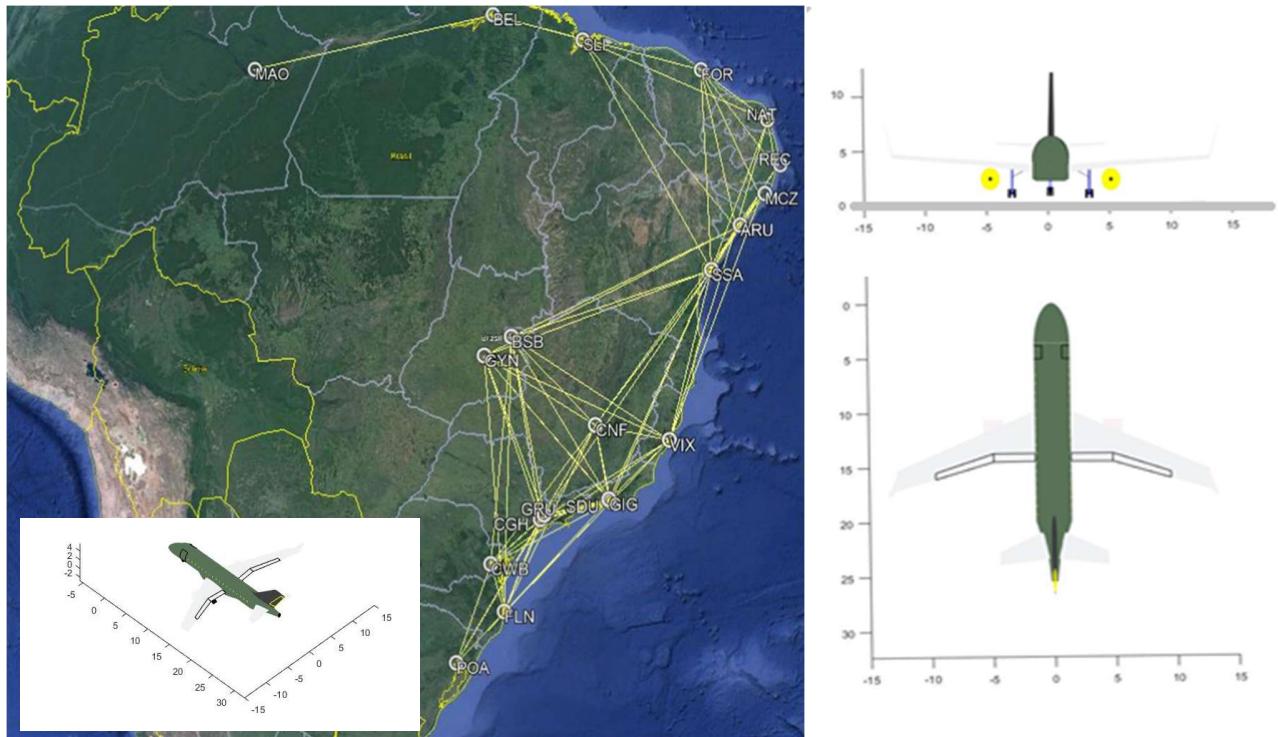


NETWORK FREQUENCIES AND CHARACTERISTICS (Max NP/ACFT#3)																			AIRCRAFT DATA					
		Arrival Airport																	Npax-Nseat	133-6				
		AJU	BEL	BSB	CGH	CNF	CWB	FLN	FOR	GIG	GRU	GYN	MAO	M CZ	NAT	POA	REC	SDU	SLI	SSA	VIX	MTOW[kg]	58,348	
Departure Airport	AJU	0	1	2	3	1	0	0	2	2	2	1	0	1	1	0	1	2	1	1	1	wS [m ²]	114.0	
	BEL	1	0	2	0	0	0	0	2	0	0	1	1	1	1	0	1	0	1	2	0	wAR	8.8	
	BSB	2	2	0	3	2	2	1	2	2	3	0	0	2	2	2	2	3	2	2	1	wTR	0.36	
	CGH	3	0	3	0	3	3	2	0	3	0	3	0	0	0	0	3	0	4	0	3	wSweep [°]	24.5	
	CNF	1	0	2	3	0	2	1	2	2	2	1	0	2	2	2	2	2	1	2	1	wTwist [°]	-4.63	
	CWB	0	0	2	3	2	0	1	0	2	3	2	0	0	0	0	2	0	3	0	2	Kink	0.36	
	FLN	0	0	1	2	1	1	0	0	2	2	1	0	0	0	1	0	2	0	0	1	BPR	6.2	
	FOR	2	2	2	0	2	0	0	0	0	0	2	0	2	2	0	0	2	0	2	2	eDiam [m]	1.70	
	GIG	2	0	2	3	2	2	2	0	0	3	2	0	2	0	2	2	0	0	0	2	OPR	32.66	
	GRU	2	0	3	0	2	3	2	0	3	0	2	0	0	0	0	3	0	3	0	3	FPR	1.8	
	GYN	1	1	0	3	1	2	1	2	2	2	0	0	2	0	2	2	2	1	2	1	eITT [K]	1505	
	MAO	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	Range [nm]	1950	
	MCZ	1	1	2	0	2	0	0	2	2	0	2	0	0	1	0	1	3	1	2	1	Cruise Mach	0.748	
	NAT	1	1	2	0	2	0	0	2	0	0	0	0	1	0	0	1	0	1	2	1	CO2 Eff [kg/pax]	107.8	
	POA	0	0	2	3	2	2	1	0	2	3	2	0	0	0	0	0	3	0	0	1	NETWORK DATA		
	REC	1	1	2	0	2	0	0	2	2	0	2	0	1	1	0	0	3	1	2	1	n	20	
	SDU	2	0	3	4	2	3	2	0	0	3	2	0	3	0	3	3	0	0	3	1	N	246	
	SLI	1	1	2	0	1	0	0	2	0	0	1	1	1	1	0	1	0	0	2	0	L	592.8	
	SSA	1	2	2	3	2	2	0	2	2	3	2	0	2	2	0	2	3	2	0	1	ADON	11.5	
	VIX	1	0	1	2	1	1	1	1	1	1	1	0	1	1	1	1	1	0	1	0	ND	0.6437	
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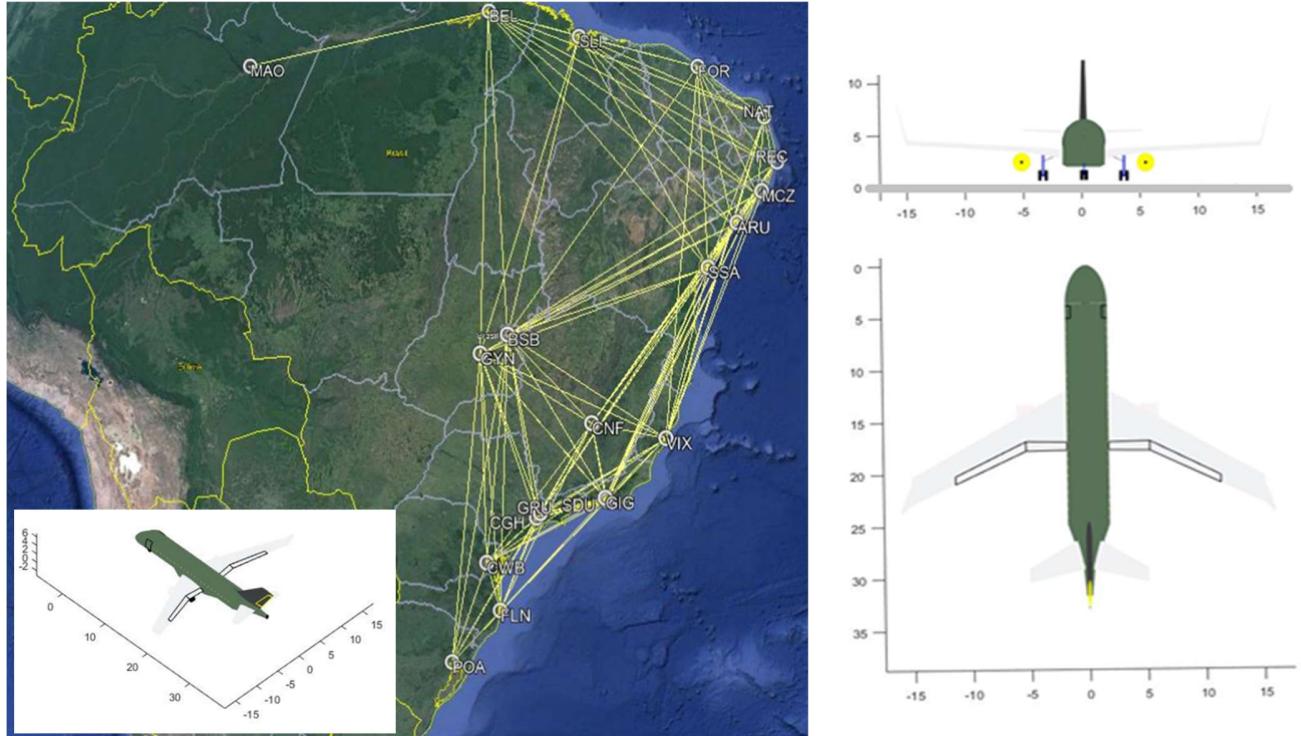


Maximum NPV

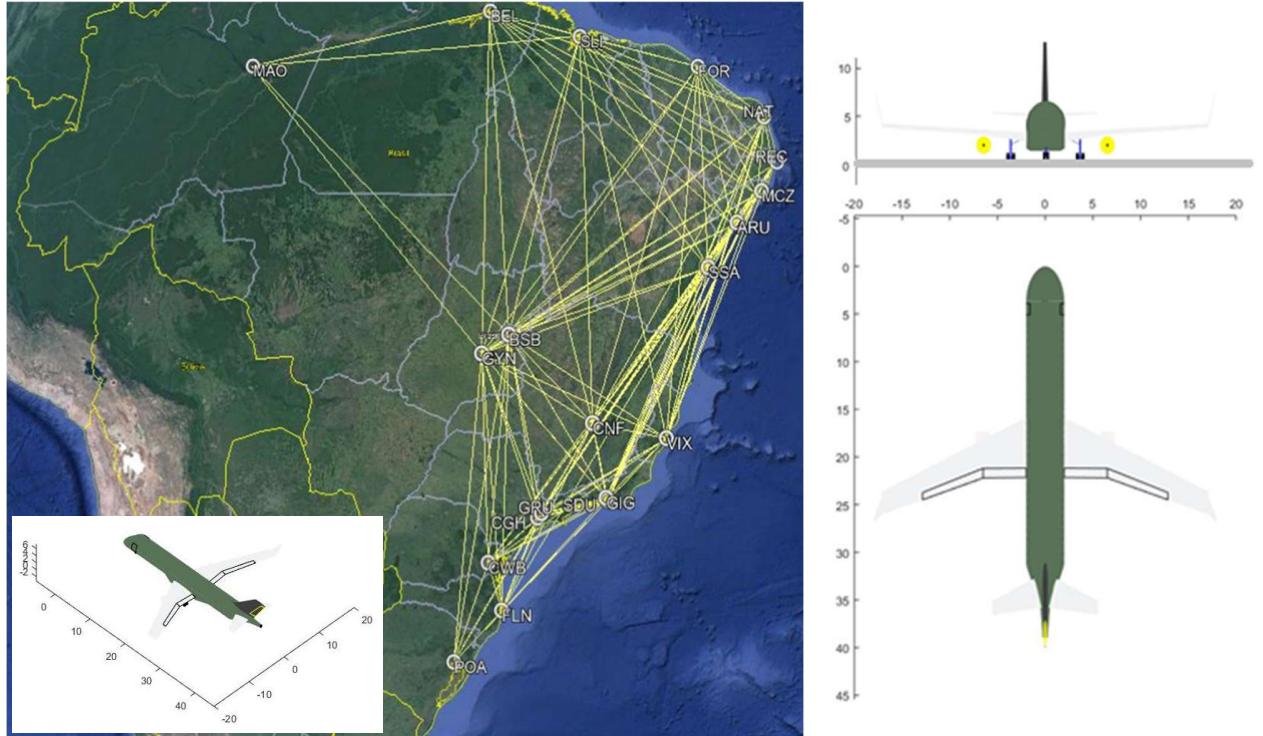
NETWORK FREQUENCIES AND CHARACTERISTICS (Max NPV/ACFT#1)																		AIRCRAFT DATA						
		Arrival Airport																Npax-Nseat	60-4					
		AJU	BEL	BSB	CGH	CNF	CWB	FLN	FOR	GIG	GRU	GYN	MAO	MCZ	NAT	POA	REC	SDU	SLI	SSA	VIX	MTOW[kg]	31,390	
Departure Airport	AJU	0	0	1	0	1	0	0	1	0	0	1	0	1	1	0	1	0	1	1	0	wS [m ²]	70.0	
	BEL	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	wAR	9.3	
	BSB	1	0	0	3	1	0	1	0	2	2	0	0	0	0	0	0	2	0	1	0	wTR	0.40	
	CGH	0	0	3	0	2	2	1	0	3	0	2	0	0	0	0	0	3	0	0	1	wSweep [°]	23.35	
	CNF	1	0	1	2	0	0	1	0	0	2	1	0	1	0	1	0	2	0	1	0	wTwist [°]	-4.6	
	CWB	0	0	0	2	0	0	1	0	2	2	1	0	0	0	1	0	2	0	0	1	Kink	0.38	
	FLN	0	0	1	1	1	0	0	1	1	1	0	0	0	0	1	0	1	0	0	0	BPR	5.90	
	FOR	1	1	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	1	2	0	eDiam [m]	1.47	
	GIG	0	0	2	3	0	2	1	0	0	0	0	0	0	0	0	2	0	0	0	2	1	OPR	26.76
	GRU	0	0	2	0	2	2	1	0	0	0	2	0	0	0	2	0	3	0	0	1	FPR	1.61	
	GYN	1	0	0	2	1	1	1	0	0	2	0	0	0	0	0	2	0	1	0	1	eITT [K]	1488	
	MAO	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Range [nm]	1600	
	MCZ	1	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1	0	1	1	0	Cruise Mach	0.741	
	NAT	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	1	1	0	CO2 Eff [kg/pax]	93.3	
	POA	0	0	0	0	1	1	1	0	2	2	0	0	0	0	1	1	0	0	2	0	n	20	
	REC	1	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	1	1	N	170	
	SDU	0	0	2	3	2	2	1	0	0	3	2	0	0	0	2	0	0	0	2	1	L	444.6	
	SLI	1	0	0	0	0	0	0	1	0	0	0	1	1	0	1	1	0	0	1	0	ADON	8.0	
	SSA	1	0	1	0	1	0	0	2	2	0	1	0	1	1	0	1	2	1	0	0	ND	0.45	
	VIX	0	0	0	1	0	1	0	0	1	1	0	0	0	0	0	0	1	0	0	0	Aci	0.90	
Acum freq		9	2	13	17	13	12	9	8	13	15	11	1	7	6	9	6	20	6	14	5			



NETWORK FREQUENCIES AND CHARACTERISTICS (Max NPV/ACFT#2)																			AIRCRAFT DATA				
		Arrival Airport																		Npax-Nseat	105-5		
		AJU	BEL	BSB	CGH	CNF	CWB	FLN	FOR	GIG	GRU	GYN	MAO	MCZ	NAT	POA	REC	SDU	SLI	SSA	VIX	MTOW[kg]	49,229
Departure Airport	AJU	0	1	1	0	1	0	0	1	2	2	1	0	1	1	0	1	2	1	1	1	wS [m ²]	99.2
	BEL	1	0	1	0	0	0	0	1	0	0	1	1	1	1	0	1	0	1	1	0	wAR	9.3
	BSB	1	1	0	3	1	2	1	2	2	2	0	0	2	0	2	2	2	1	2	1	wTR	0.45
	CGH	0	0	3	0	2	2	2	0	3	0	2	0	0	0	0	3	0	3	0	1	wSweep [°]	30.36
	CNF	1	0	1	2	0	2	1	0	2	2	1	0	1	0	1	2	2	0	1	1	wTwist [°]	-3.06
	CWB	0	0	2	2	2	0	1	0	2	2	1	0	0	0	0	1	0	2	0	0	Kink	0.35
	FLN	0	0	1	2	1	1	0	0	1	1	1	0	0	0	1	0	1	0	0	0	BPR	5.51
	FOR	1	1	2	0	0	0	0	0	0	0	0	0	0	2	1	0	2	0	1	2	eDiam [m]	1.48
	GIG	2	0	2	3	2	2	1	0	0	3	2	0	2	0	2	0	0	0	2	1	OPR	25.91
	GRU	2	0	2	0	2	2	1	0	3	0	2	0	0	0	2	0	3	0	3	1	FPR	1.65
	GYN	1	1	0	2	1	1	0	2	2	0	0	0	1	0	1	0	2	1	1	1	eITT [K]	1499
	MAO	0	1	0	2	1	1	0	2	2	0	0	0	0	0	0	0	0	0	0	0	Range [nm]	1600
	MCZ	1	1	2	0	1	0	0	2	2	0	1	0	0	1	0	1	2	1	1	1	Cruise Mach	0.785
	NAT	1	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	1	1	1	CO2 Eff [kg/pax]	20.5
	POA	0	0	2	3	1	1	0	2	2	1	0	0	0	0	0	0	2	0	0	1	NETWORK DATA	
	REC	1	1	2	0	2	0	0	2	0	0	0	0	0	1	1	0	0	0	1	1	n	20
	SDU	2	0	2	3	2	2	1	0	0	3	2	0	2	0	2	0	0	0	2	1	N	220
	SLI	1	1	1	0	0	0	0	1	0	0	1	0	1	1	0	1	0	0	1	0	L	546.7
	SSA	1	1	2	3	1	0	0	2	2	3	1	0	1	1	0	1	2	1	0	1	ADON	10.3
	VIX	1	0	1	1	1	1	0	0	1	1	1	0	0	1	1	1	1	0	1	0	ND	0.58
Acum freq		17	10	27	24	20	16	10	12	24	23	18	1	17	8	16	13	24	9	23	14	Aci	0.90



NETWORK FREQUENCIES AND CHARACTERISTICS (Max NPV/ACFT#3)																			AIRCRAFT DATA				
		Arrival Airport																		Npax-Nseat	174-6		
		AJU	BEL	BSB	CGH	CNF	CWB	FLN	FOR	GIG	GRU	GYN	MAO	MCZ	NAT	POA	REC	SDU	SLI	SSA	VIX	MTOW[kg]	68,530
Departure Airport	AJU	0	1	1	2	1	1	0	1	2	2	1	0	1	1	0	1	2	1	1	1	wS [m ²]	124.6
	BEL	1	0	1	0	1	0	0	1	0	0	1	1	1	1	0	1	0	1	1	0	wAR	9.4
	BSB	1	1	0	3	1	2	1	2	2	2	0	1	2	1	2	2	2	1	2	1	wTR	0.38
	CGH	2	0	3	0	2	2	2	0	3	0	2	0	3	0	3	3	3	0	3	1	wSweep [°]	25.0
	CNF	1	1	1	2	0	2	1	2	2	2	1	0	1	1	1	2	2	1	1	1	wTwist [°]	-4.5
	CWB	1	0	2	2	2	0	1	0	2	2	1	0	0	0	1	0	2	0	2	1	Kink	0.38
	FLN	0	0	1	2	1	1	0	0	1	1	1	0	0	0	1	0	1	0	1	0	BPR	5.3
	FOR	1	1	2	0	2	0	0	0	0	0	2	0	2	1	0	2	0	1	2	1	eDiam [m]	1.57
	GIG	2	0	2	3	2	2	1	0	0	3	2	0	2	2	2	2	0	0	2	1	OPR	32.7
	GRU	2	0	2	0	2	1	0	3	0	2	0	2	0	2	3	3	0	3	1	FPR	1.55	
	GYN	1	1	0	2	1	1	1	2	2	2	0	1	1	1	1	2	1	1	1	1	eITT [K]	1522
	MAO	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	Range [nm]	1550
	MCZ	1	1	2	3	1	0	0	2	2	2	1	0	0	1	0	1	2	1	1	1	Cruise Mach	0.787
	NAT	1	1	1	0	1	0	0	1	2	0	1	0	0	0	1	2	1	1	1	1	CO2 Eff [kg/pax]	117.2
	POA	0	0	2	3	1	1	1	0	2	2	1	0	0	0	0	0	2	0	0	1	n	20
	REC	1	1	2	3	2	0	0	2	2	3	1	0	1	1	0	0	2	1	1	1	N	270
	SDU	2	0	2	3	2	1	0	0	3	2	0	2	2	2	2	0	0	2	1	1	L	643.0
	SLI	1	1	1	0	1	0	0	1	0	0	1	1	1	1	0	1	0	0	1	1	ADON	12.7
	SSA	1	1	2	3	1	2	1	2	2	3	1	0	1	1	0	1	2	1	0	1	ND	0.71
	VIX	1	0	1	1	1	1	0	1	1	1	1	0	1	1	1	1	1	1	1	0	Aci	0.9
Acum freq																							



Baseline Aircraft

NETWORK FREQUENCIES AND CHARACTERISTICS (BASELINE AIRCRAFT)																	AIRCRAFT DATA					
Departure Airport	Arrival Airport																Npax-Nseat	78-4				
	AJU	BEL	BSB	CGH	CNF	CWB	FLN	FOR	GIG	GRU	GYN	MAO	MCZ	NAT	POA	REC	SDU	SLI	SSA	VIX	MTOW[kg]	38,790
AJU	0	0	6	0	6	0	0	6	0	0	0	0	6	6	0	6	0	6	3	wS [m ²]	72.7	
BEL	0	0	0	0	0	0	0	6	0	0	0	3	0	0	0	0	0	3	0	wAR	8.6	
BSB	6	0	0	12	6	9	6	0	9	12	0	0	0	0	0	0	9	0	9	wTR	0.44	
CGH	0	0	12	0	12	12	9	0	12	0	9	0	0	0	12	0	15	0	0	wSweep [°]	25.0	
CNF	6	0	6	12	0	6	6	0	9	9	6	0	0	0	6	0	9	0	6	wTwist [°]	-3	
CWB	0	0	9	12	6	0	6	0	9	9	6	0	0	0	6	0	9	0	0	Kink	0.32	
FLN	0	0	6	9	6	6	0	0	6	6	3	0	0	0	3	0	6	0	0	BPR	5.00	
FOR	6	6	0	0	0	0	0	0	0	0	0	0	9	6	0	9	0	6	9	eDiam [m]	1.42	
GIG	0	0	9	12	9	9	6	0	0	12	9	0	0	0	9	0	0	0	9	OPR	28	
GRU	0	0	12	0	9	9	6	0	12	0	9	0	0	0	9	0	12	0	0	FPR	1.6	
GYN	0	0	0	9	6	6	3	0	6	9	0	0	0	0	0	9	0	6	3	eITT [K]	1240	
MAO	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Range [nm]	2000	
MCZ	6	0	0	0	0	0	0	9	0	0	0	0	0	6	0	6	0	6	6	Cruise Mach	0.767	
NAT	6	0	0	0	0	0	0	6	0	0	0	0	6	0	0	6	0	6	6	CO2 Eff [kg/pax]	121.3	
POA	0	0	0	12	6	6	3	0	9	9	0	0	0	0	0	9	0	0	0	NETWORK DATA		
REC	6	0	0	0	0	0	0	9	0	0	0	0	6	6	0	0	0	6	6	n	20	
SDU	0	0	12	15	9	12	6	0	0	12	9	0	0	0	9	0	0	0	12	N	166	
SLI	6	3	0	0	0	0	0	6	0	0	0	0	6	6	0	6	0	6	0	L	436.8	
SSA	6	0	9	0	6	0	0	9	9	0	6	0	6	6	0	6	12	6	0	ADON	7.7	
VIX	3	0	3	6	3	3	3	0	3	6	3	0	3	0	0	0	6	0	3	ND	0.44	
Acum freq	51	12	84	99	84	78	54	51	84	84	60	3	42	36	54	39	96	39	84	48	Aci	0.90

