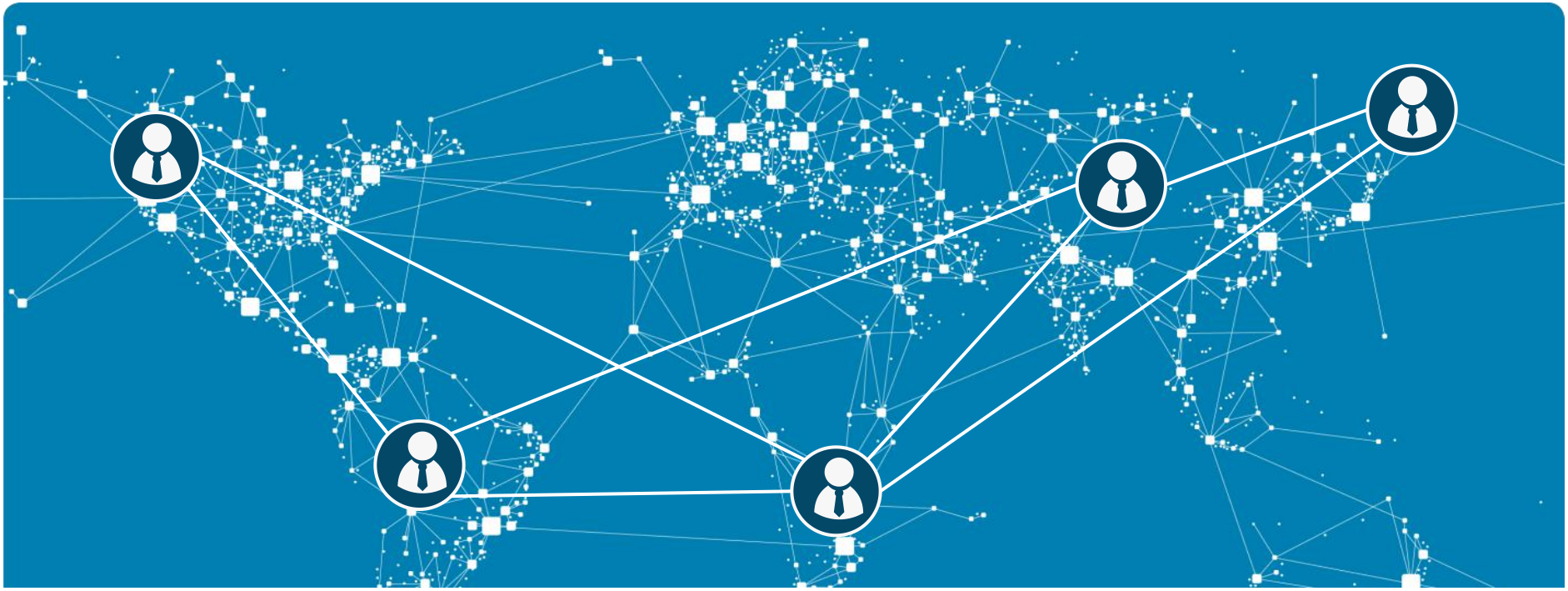

周报告

宋金林　导师：李仁发教授

- 做实验（快速傅里叶变换应用和高斯消去应用）

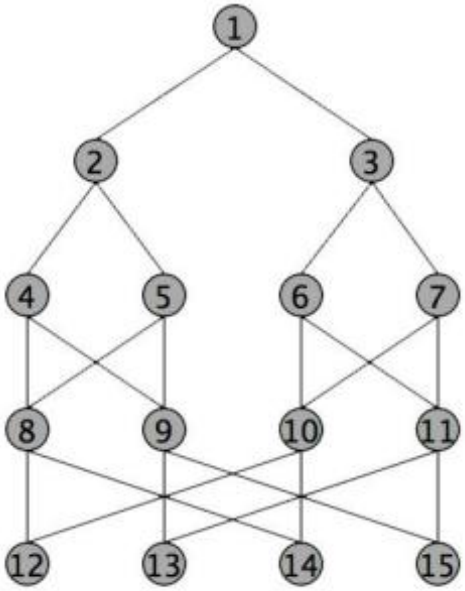

Fig. 5: Example of the fast Fourier transform application with ρ=4.

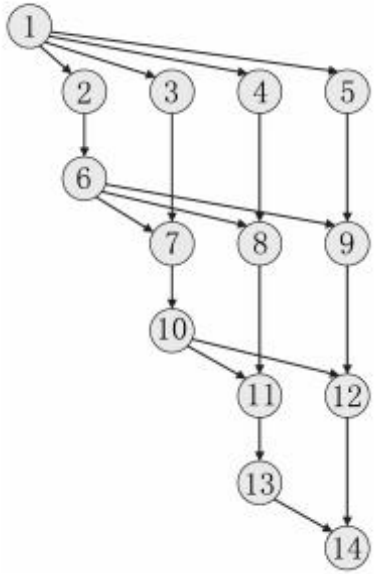

Fig. 6: Example of the Gaussian elimination parallel application with ρ=5.

$$|N| = (2 \times \rho - 1) + \rho \times \log_2 \rho$$

$$|N| = \frac{\rho^2 + \rho - 2}{2}$$

FFT

不同任务规模

P=32	E_given =(min+max)/10								
size	Emin	Emax	Egiven	HEFT		MSLECC		mine	
				E	SL	E	SL	E	SL
rho=8,N=39	128.24	4450.81	457.90	916.82	419.00	457.90	**637.53**	457.64	**511.66**
rho=16,N=95	264.01	10747.04	1101.10	1852.55	617.00	1101.10	**862.26**	1099.31	**727.17**
rho=32,N=223	707.04	25729.97	2643.70	5644.86	811.00	2643.70	**1420.88**	2641.30	**903.41**
rho=64,N=511	1673.13	58408.64	6008.18	11966.81	965.00	6008.18	**2690.00**	6007.41	**1026.06**
rho=128,N=1151	3474.28	126382.08	12985.64	21388.55	1049.00	12985.64	**3524.00**	12985.07	**1145.83**

不同能耗约束 $(E_{\min}+E_{\max})/10 \le E_{\text{given}} \le (E_{\min}+E_{\max})/6$

P=32	rho=64,N=511								
Egiven	Emin	Emax	Egiven	HEFT		MSLECC		mine	
				E	SL	E	SL	E	SL
(min+max)/6	1654.46	58416.25	10011.79	11097.05	883.00	10011.78	**1202.48**	9970.09	**887.61**
(min+max)/7	1654.46	58416.25	8581.53	11097.05	883.00	8581.53	**1437.30**	8551.20	**932.24**
(min+max)/8	1654.46	58416.25	7508.84	11097.05	883.00	7508.84	**1613.30**	7506.98	**952.89**
(min+max)/9	1654.46	58416.25	6674.52	11097.05	883.00	6674.52	**1761.24**	6670.00	**969.48**
(min+max)/10	1654.46	58416.25	6007.07	11097.05	883.00	6007.07	**2034.57**	6006.95	**963.37**

不同任务规模

P=32	Egiven =(min+max)/10								
size	Emin	Emax	Egiven	HEFT		MSLECC		mine	
				E	SL	E	SL	E	SL
rho=10,N=54	163.24	6290.55	645.38	1323.57	945.00	645.38	**1410.51**	645.28	**1241.31**
rho=20,N=209	611.07	24023.34	2463.44	4372.55	2023.00	2463.44	**2990.91**	2463.26	**2470.18**
rho=30,N=464	1428.53	53014.49	5444.30	10456.16	3050.00	5444.30	**5088.47**	5444.24	**3791.76**
rho=40,N=819	2574.24	93081.17	9565.54	19503.5	3711	9565.54	**6919.90**	9564.14	**4614.21**
rho=50,N=1274	4172.62	144821.48	14899.41	31796.78	5027.00	14899.41	**9370.67**	14899.18	**6040.58**

不同能耗约束 $(E_{\min}+E_{\max})/10 \le E_{\text{given}} \le (E_{\min}+E_{\max})/6$

P=32	rho=50,N=1274								
Egiven	Emin	Emax	Egiven	HEFT		MSLECC		mine	
				E	SL	E	SL	E	SL
(min+max)/6	4033.43	142345.19	24396.44	32506.63	4920.00	24396.44	**7780.13**	24381.54	**5418.07**
(min+max)/7	4033.43	142345.19	20911.23	32506.63	4920.00	20911.23	**8262.89**	20901.68	**5599.24**
(min+max)/8	4033.43	142345.19	18297.33	32506.63	4920.00	18297.33	**8570.58**	18292.04	**5789.34**
(min+max)/9	4033.43	142345.19	16264.29	32506.63	4920.00	16264.29	**8922.08**	16259.45	**5940.15**
(min+max)/10	4033.43	142345.19	14637.86	32506.63	4920.00	14637.86	**9333.78**	14636.83	**6186.76**

结论

- 两种类型的应用模型都显示了修改后的算法更有效（满足能耗约束的前提下，应用的调度长度更短）。

- 下周：继续写小论文

THANKS