

# A companion to "How different are ranking methods for fuzzy numbers? A numerical study"

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## 1 Scatter-plots depicting the relationship of different ranking methods

In [1], some numerical simulations were performed to investigate the relationship between different ranking methods for fuzzy numbers. In this companion to the article, the scatter-plots depicting the results of the numerical simulation are included. In the plots, every point represents one of the 1000 randomly generated trapezoidal fuzzy numbers with the support in the  $[0, 1]$  interval.

Method	AD <sup>0.5</sup>	CoM	CoG	Med	C	E <sub>p</sub>	Y <sub>2</sub>	Y <sub>3</sub>	Y <sub>4</sub>	CH <sup>1</sup>	K	BK	PD	N <sup>0.5</sup>
AD <sup>0.5</sup>		1	2	3	4	5	6	7	8	9	10	11	12	13
CoM			14	15	16	17	18	19	20	21	22	23	24	25
CoG				26	27	28	29	30	31	32	33	34	35	36
Med					37	38	39	40	41	42	43	44	45	46
C						47	48	49	50	51	52	53	54	55
Y <sub>2</sub>							56	57	58	59	60	61	62	63
Y <sub>3</sub>								64	65	66	67	68	69	70
Y <sub>4</sub>									71	72	73	74	75	76
CH <sup>1</sup>										77	78	79	80	81
CH <sup>1</sup>											82	83	84	85
K												86	87	88
BK													89	90
PD														91
N <sup>0.5</sup>														

Table 1: The values indicate the numbering of the Figures containing the corresponding scatter-plots

## References

- [1] Matteo Brunelli, József Mezei. How different are ranking methods for fuzzy numbers? A numerical study, *International Journal of Approximate Reasoning*, submitted

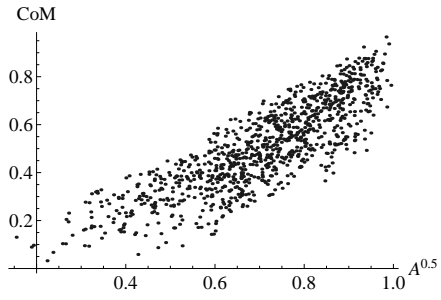


Figure 1:  $AD^{0.5}$  vs. CoM

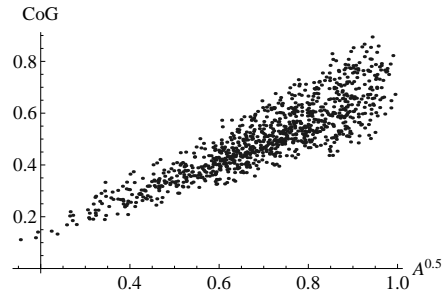


Figure 2:  $AD^{0.5}$  vs. CoG

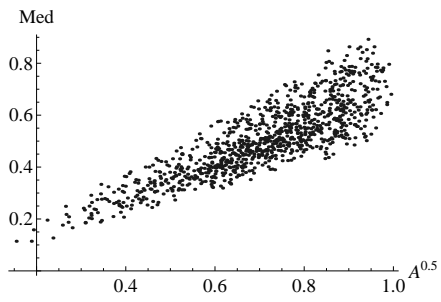


Figure 3:  $AD^{0.5}$  vs. Med

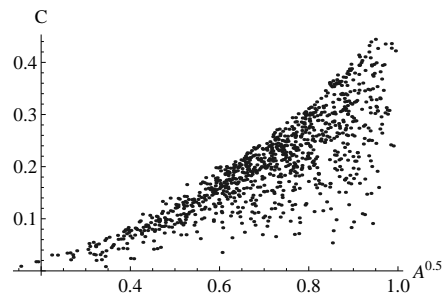


Figure 4:  $AD^{0.5}$  vs. C

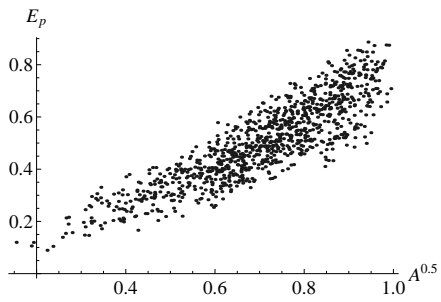


Figure 5:  $AD^{0.5}$  vs.  $E_p$

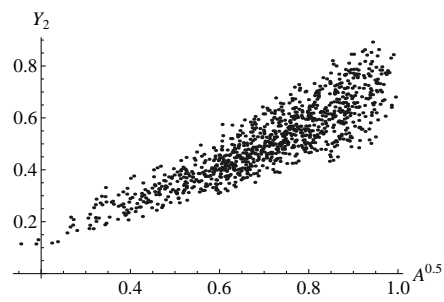


Figure 6:  $AD^{0.5}$  vs.  $Y_2$

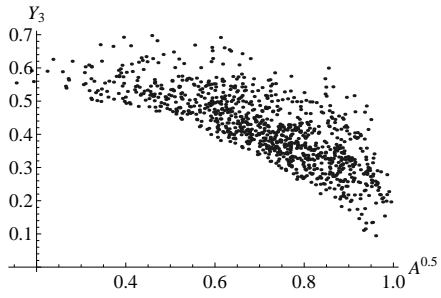


Figure 7:  $AD^{0.5}$  vs.  $Y_3$

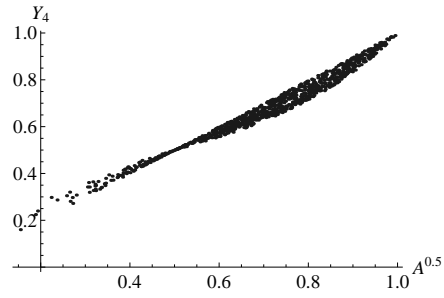


Figure 8:  $AD^{0.5}$  vs.  $Y_4$

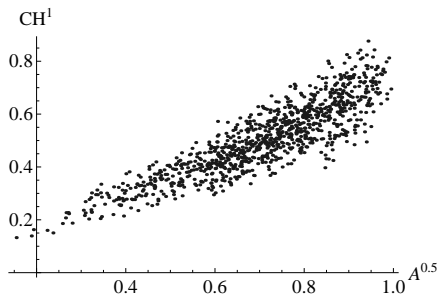


Figure 9:  $AD^{0.5}$  vs.  $CH^1$

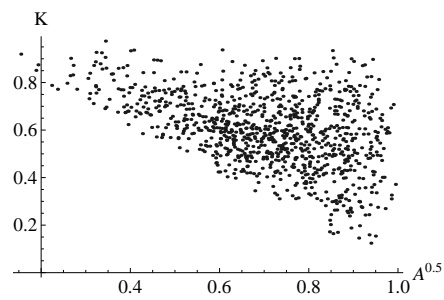


Figure 10:  $AD^{0.5}$  vs.  $K$

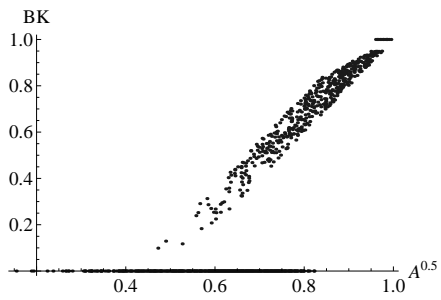


Figure 11:  $AD^{0.5}$  vs.  $BK$

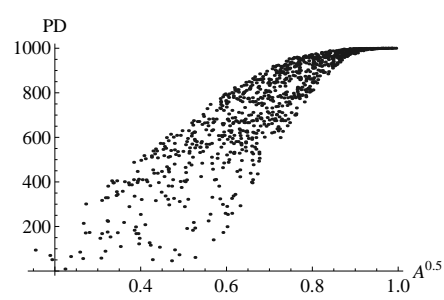


Figure 12:  $AD^{0.5}$  vs.  $PD$

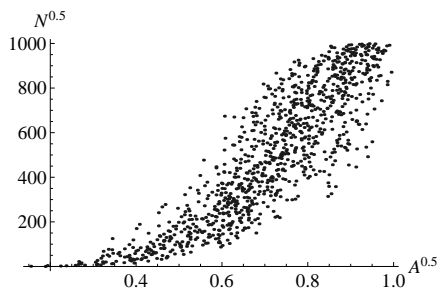


Figure 13:  $AD^{0.5}$  vs.  $N^{0.5}$

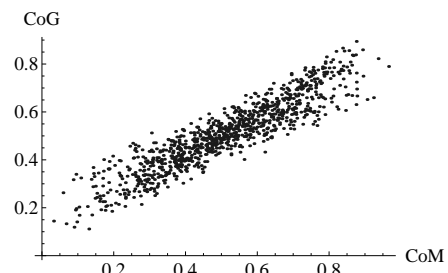


Figure 14: CoM vs. CoG

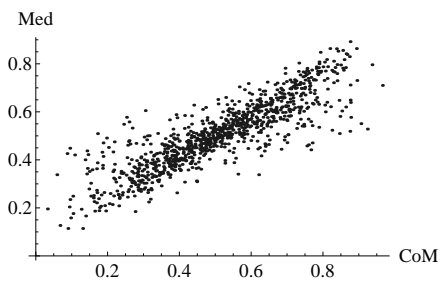


Figure 15: CoM vs. Med

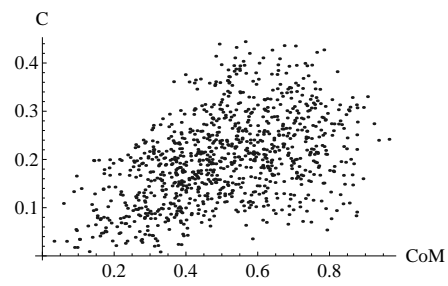


Figure 16: CoM vs. C

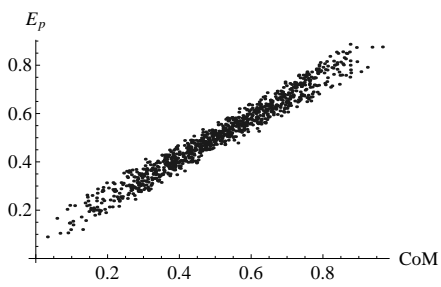


Figure 17: CoM vs.  $E_p$

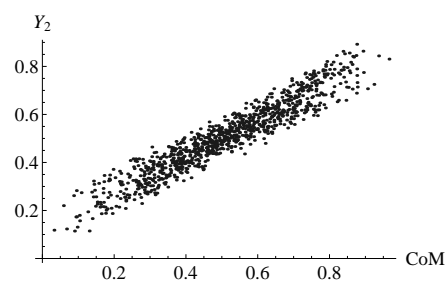


Figure 18: CoM vs.  $Y_2$

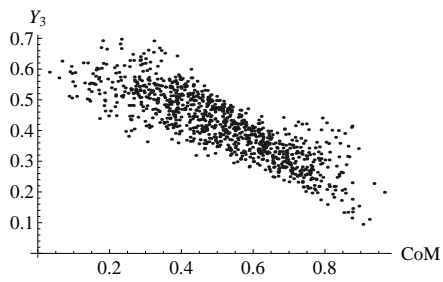


Figure 19: CoM vs.  $Y_3$

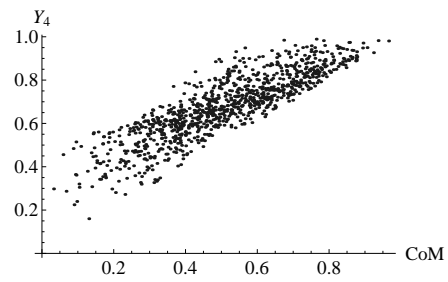


Figure 20: CoM vs.  $Y_4$

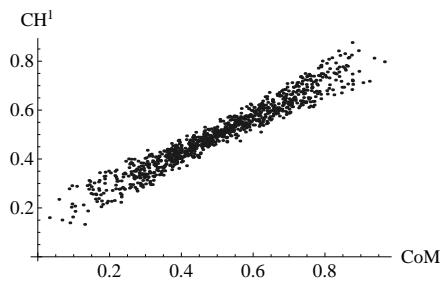


Figure 21: CoM vs.  $CH^1$

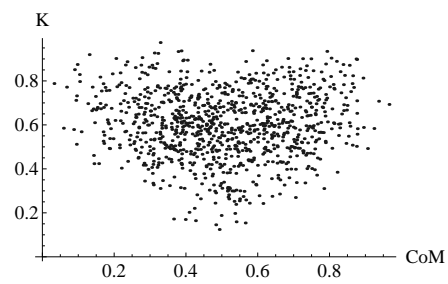


Figure 22: CoM vs.  $K$

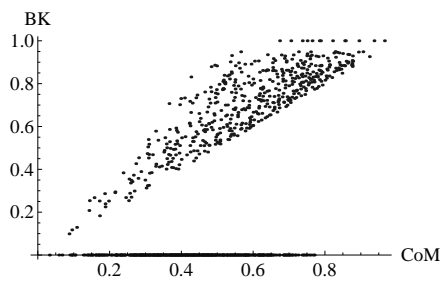


Figure 23: CoM vs.  $BK$

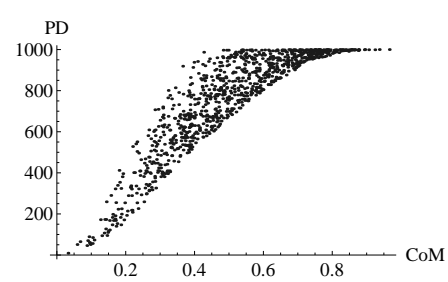


Figure 24: CoM vs.  $PD$

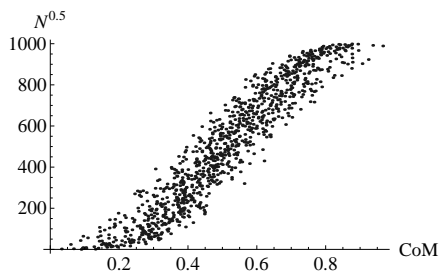


Figure 25: CoM vs.  $N^{0.5}$

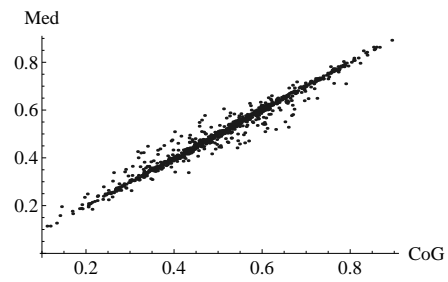


Figure 26: CoG vs. Med

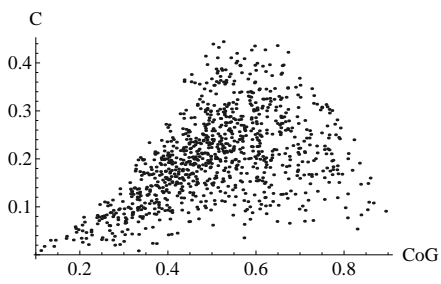


Figure 27: CoG vs. C

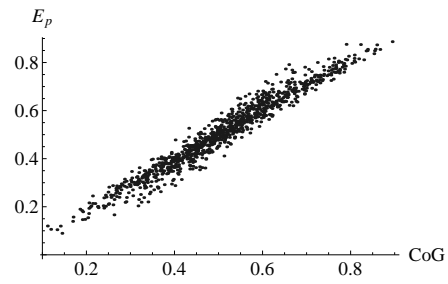


Figure 28: CoG vs.  $E_p$

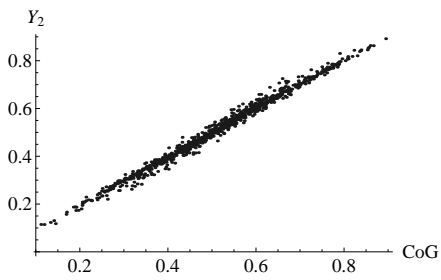


Figure 29: CoG vs.  $Y_2$

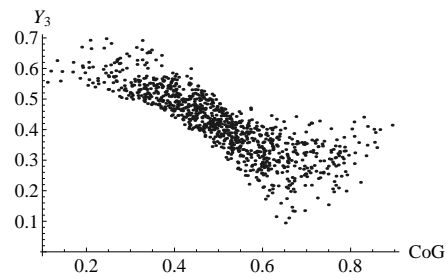


Figure 30: CoG vs.  $Y_3$

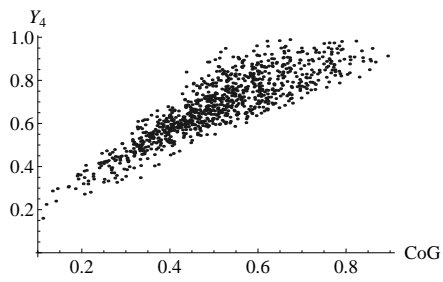


Figure 31: CoG vs.  $Y_4$

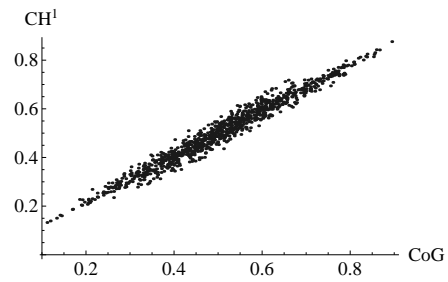


Figure 32: CoG vs.  $CH^1$

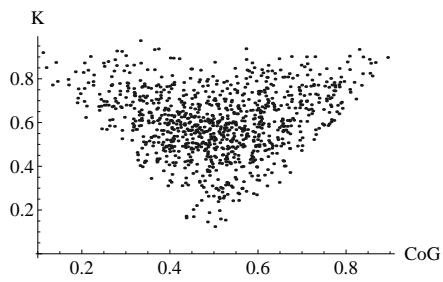


Figure 33: CoG vs. K

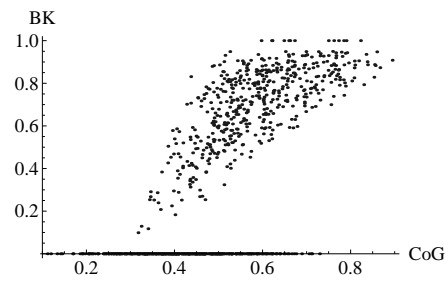


Figure 34: CoG vs. BK

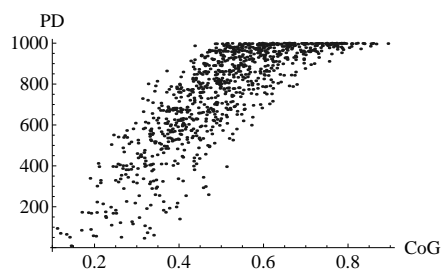


Figure 35: CoG vs. PD

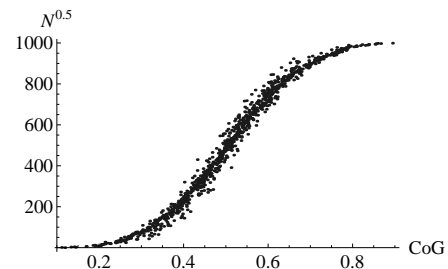


Figure 36: CoG vs.  $N^{0.5}$



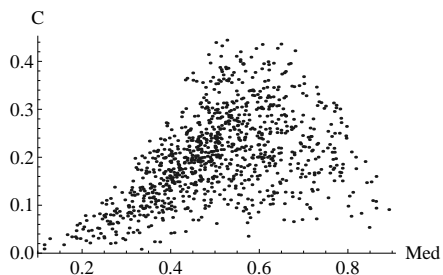


Figure 37: Med vs. C

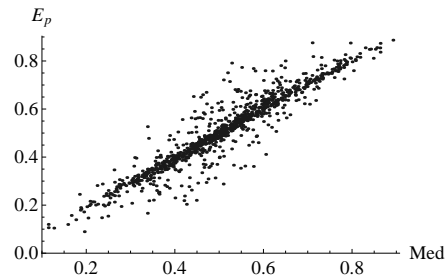


Figure 38: Med vs.  $E_p$

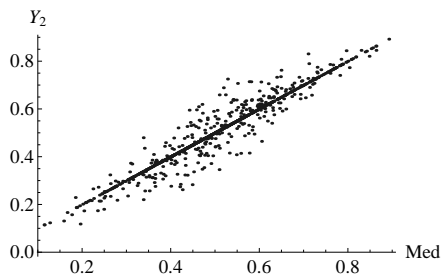


Figure 39: Med vs.  $Y_2$

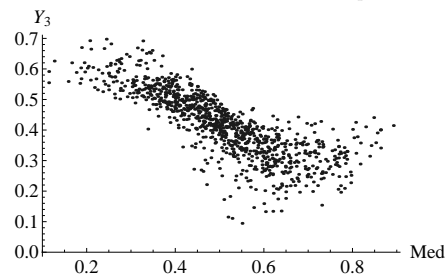


Figure 40: Med vs.  $Y_3$

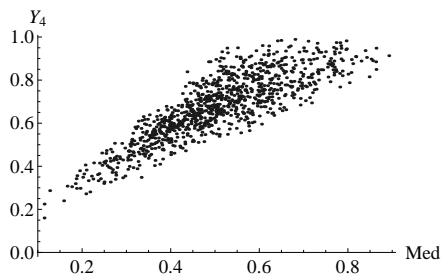


Figure 41: Med vs.  $Y_4$

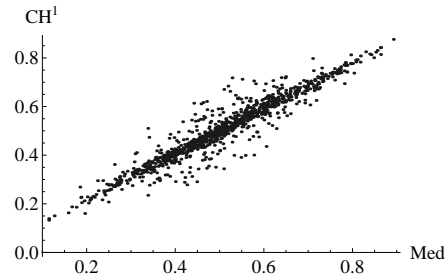


Figure 42: Med vs.  $CH^1$

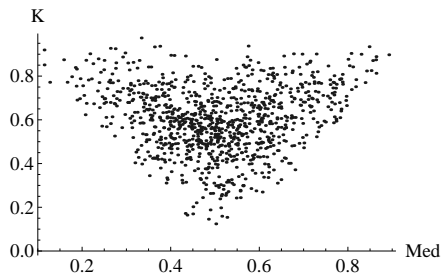


Figure 43: Med vs. K

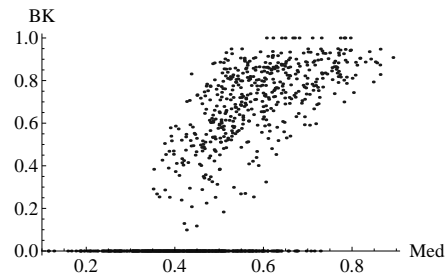


Figure 44: Med vs. BK

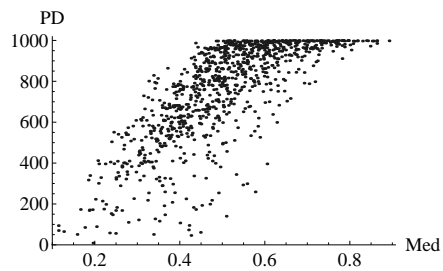


Figure 45: Med vs. PD

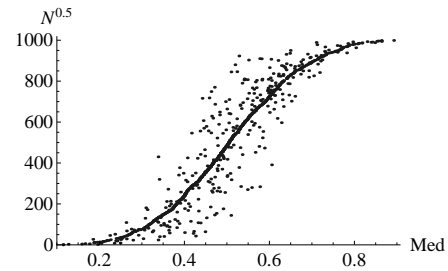


Figure 46: Med vs.  $N^{0.5}$

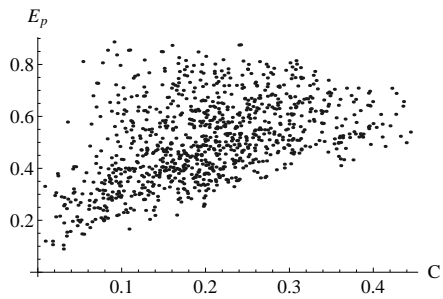


Figure 47: C vs.  $E_p$

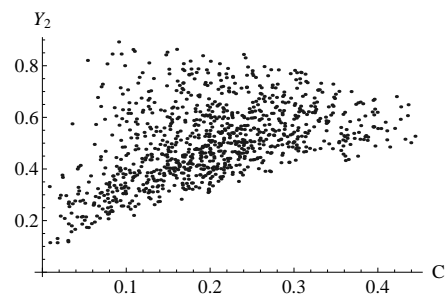


Figure 48: C vs.  $Y_2$

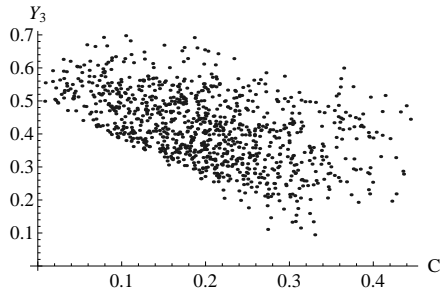


Figure 49: C vs.  $Y_3$

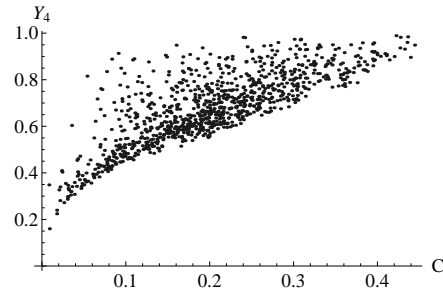


Figure 50: C vs.  $Y_4$

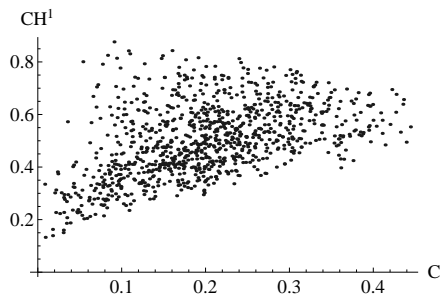


Figure 51: C vs.  $CH^1$

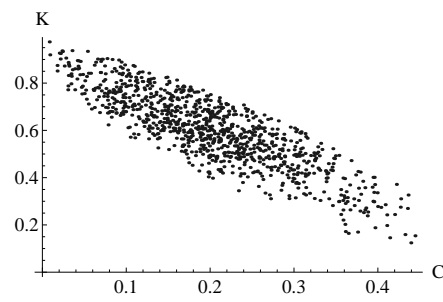


Figure 52: C vs. K

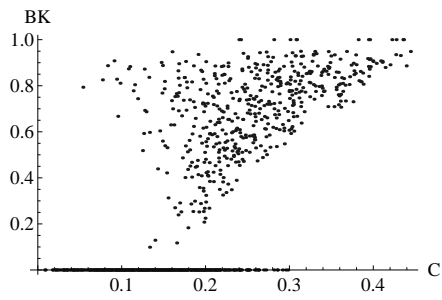


Figure 53: C vs. BK

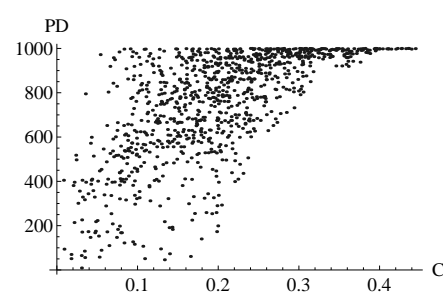


Figure 54: C vs. PD

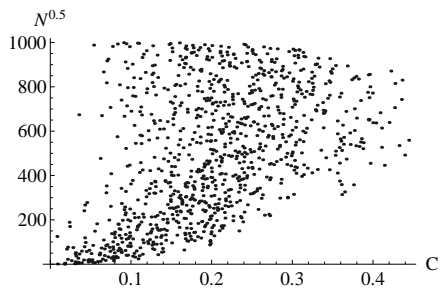


Figure 55:  $C$  vs.  $N^{0.5}$

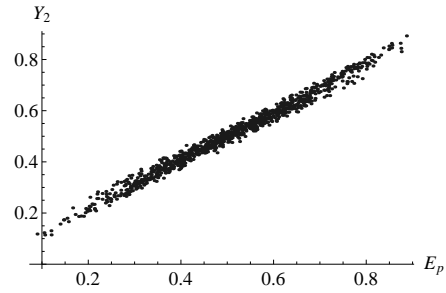


Figure 56:  $E_p$  vs.  $Y_2$

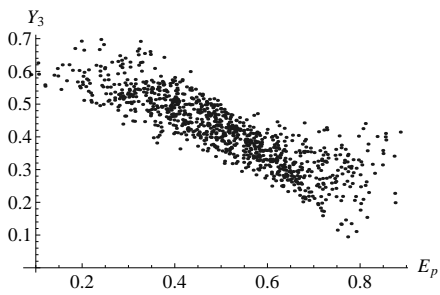


Figure 57:  $E_p$  vs.  $Y_3$

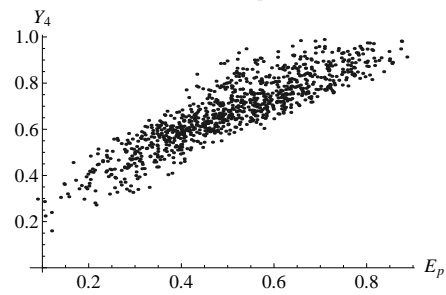


Figure 58:  $E_p$  vs.  $Y_4$

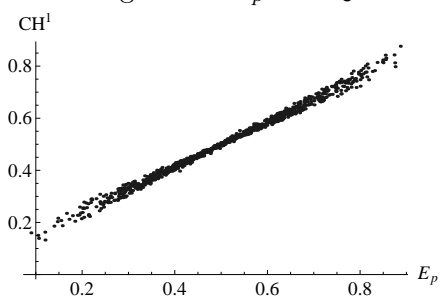


Figure 59:  $E_p$  vs.  $CH^1$

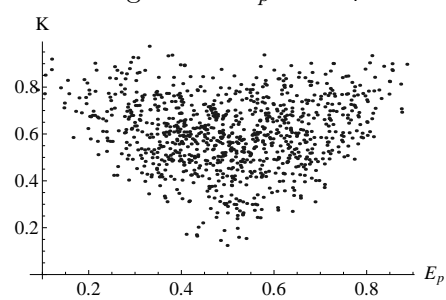


Figure 60:  $E_p$  vs.  $K$

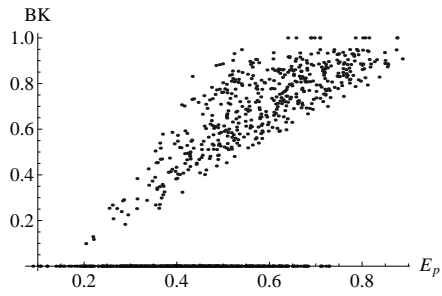


Figure 61:  $E_p$  vs. BK

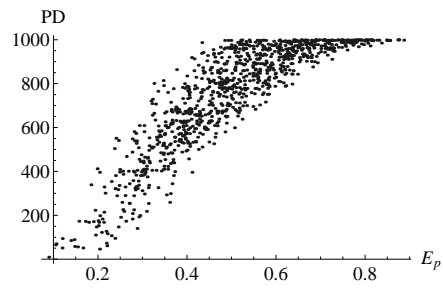


Figure 62:  $E_p$  vs. PD

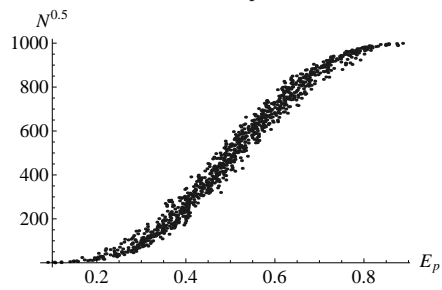


Figure 63:  $E_p$  vs.  $N^{0.5}$

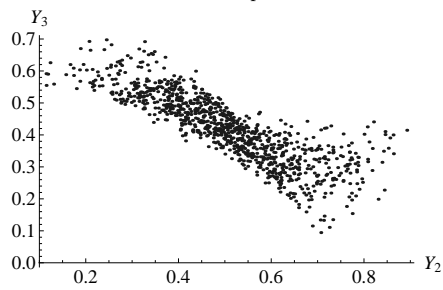


Figure 64:  $Y_2$  vs.  $Y_3$

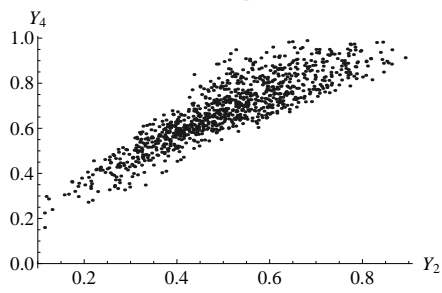


Figure 65:  $Y_2$  vs.  $Y_4$

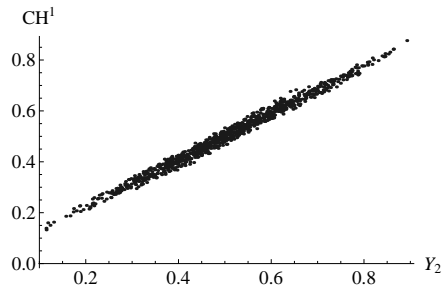


Figure 66:  $Y_2$  vs.  $CH^1$

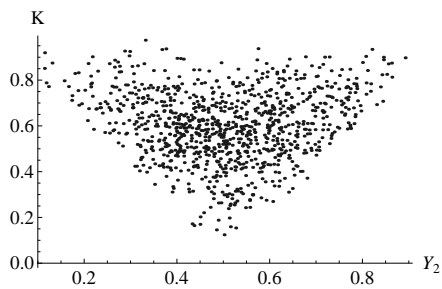


Figure 67:  $Y_2$  vs.  $K$

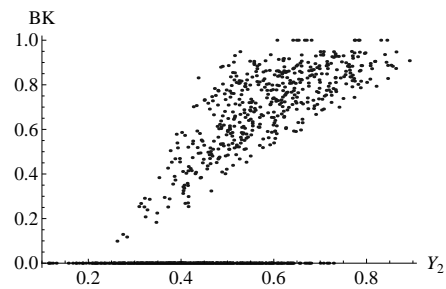


Figure 68:  $Y_2$  vs.  $BK$

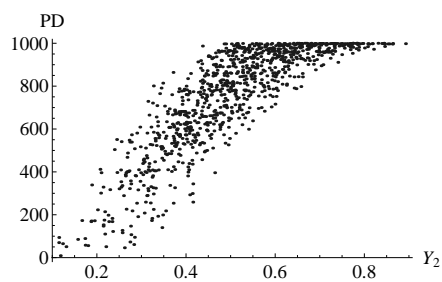


Figure 69:  $Y_2$  vs.  $PD$

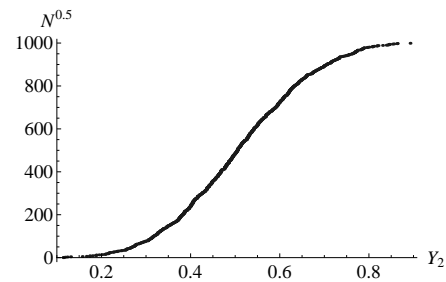


Figure 70:  $Y_2$  vs.  $N^{0.5}$

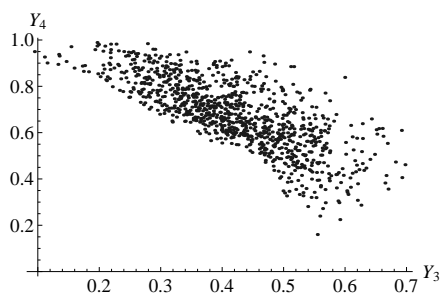


Figure 71:  $Y_3$  vs.  $Y_4$

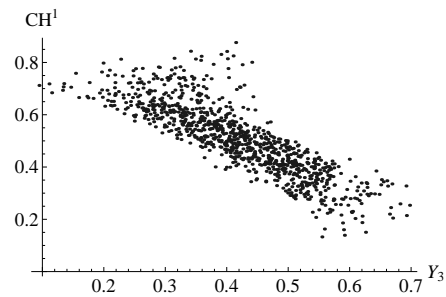


Figure 72:  $Y_3$  vs.  $CH^1$

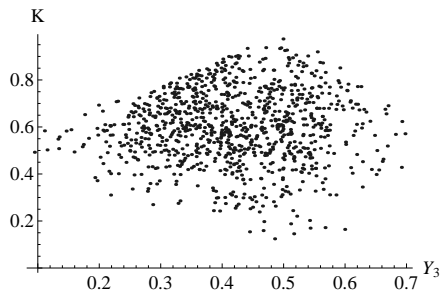


Figure 73:  $Y_3$  vs.  $K$

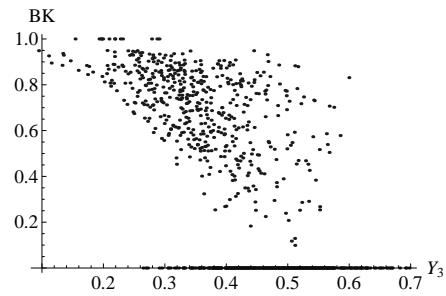


Figure 74:  $Y_3$  vs.  $BK$

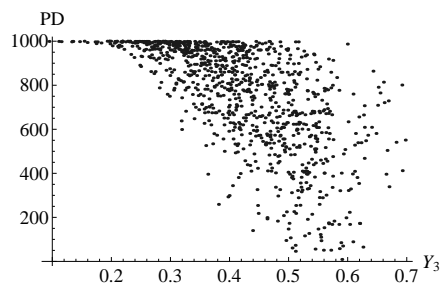


Figure 75:  $Y_3$  vs.  $PD$

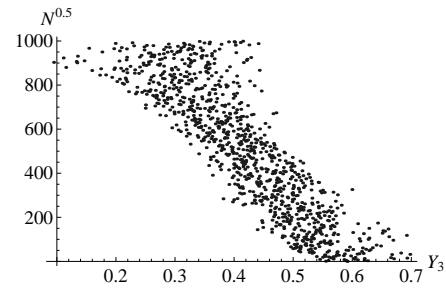


Figure 76:  $Y_3$  vs.  $N^{0.5}$

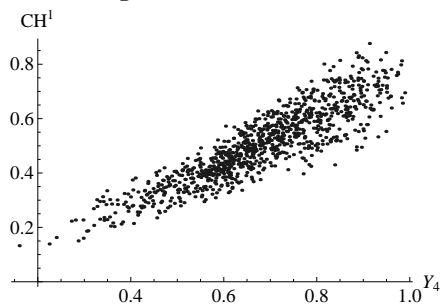


Figure 77:  $Y_4$  vs.  $CH^1$

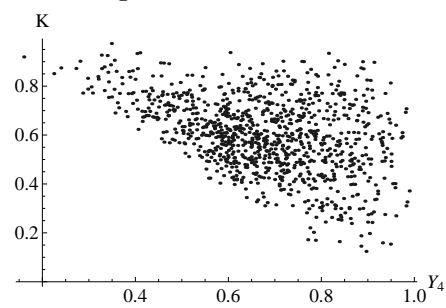


Figure 78:  $Y_4$  vs.  $K$

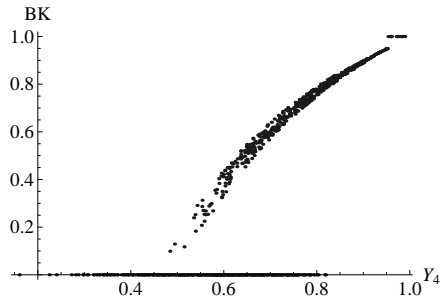


Figure 79:  $Y_4$  vs. BK

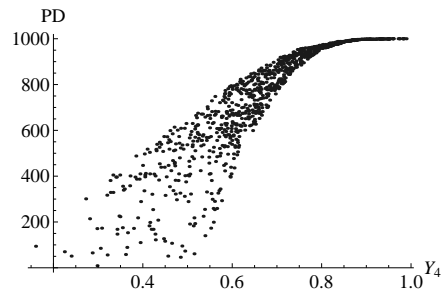


Figure 80:  $Y_4$  vs. PD

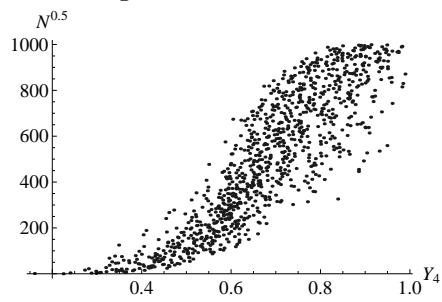


Figure 81:  $Y_4$  vs.  $N^{0.5}$

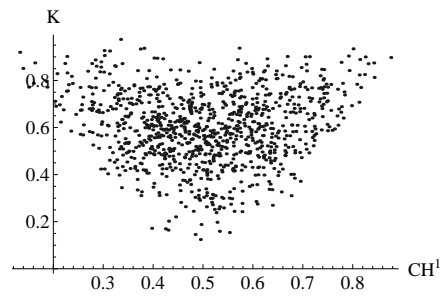


Figure 82:  $CH^1$  vs. K

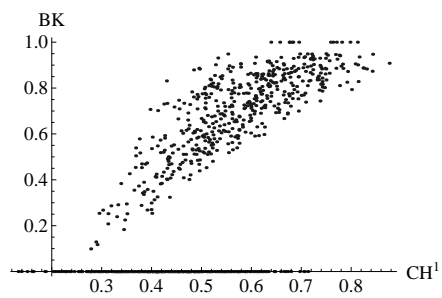


Figure 83:  $CH^1$  vs. BK

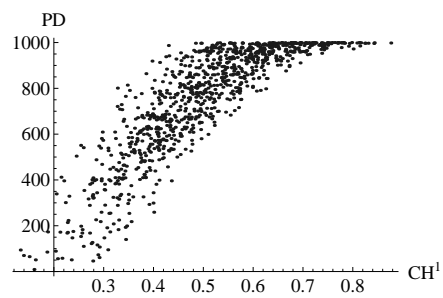


Figure 84:  $dCH^1$  vs. PD



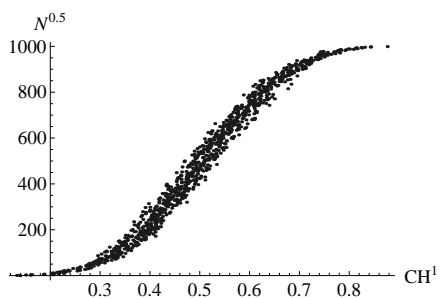


Figure 85:  $CH^1$  vs.  $N^{0.5}$

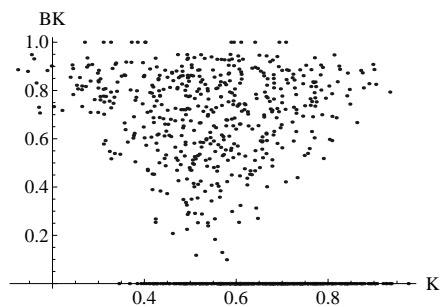


Figure 86:  $K$  vs.  $BK$

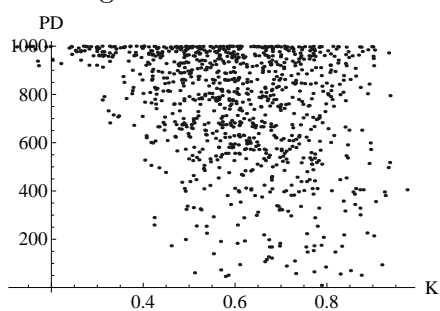


Figure 87:  $K$  vs.  $PD$

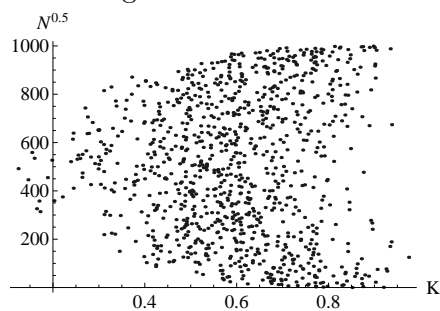


Figure 88:  $K$  vs.  $N^{0.5}$

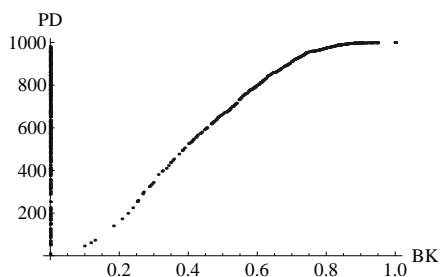


Figure 89:  $BK$  vs.  $PD$

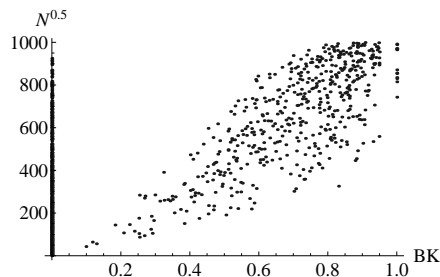


Figure 90:  $BK$  vs.  $N^{0.5}$

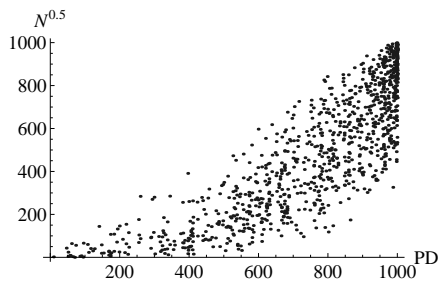


Figure 91:  $PD$  vs.  $N^{0.5}$