

Base Sets for EKGDDs

1. BASE-SETS FOR $(2^m, 2)$ EKGDD

A $(\mathbb{Z}_5 \times [2])$ -base-set for $(2^5, 2)$ EKGDD:

$$\{\{0_0, 3_0\}, \{1_0, 2_1\}\} \quad \{\{0_1, 3_1\}, \{1_1, 2_0\}\}$$

A $(\mathbb{Z}_7 \times [2])$ -base-set for $(2^7, 2)$ EKGDD:

$$\{\{0_1, 4_2\}, \{1_1, 2_1\}\} \quad \{\{0_1, 5_2\}, \{4_2, 1_2\}\} \\ \{\{0_1, 1_2\}, \{6_2, 3_1\}\}$$

A $(\mathbb{Z}_9 \times [2])$ -base-set for $(2^9, 2)$ EKGDD:

$$\{\{0_0, 1_0\}, \{2_0, 5_0\}\} \quad \{\{0_0, 4_0\}, \{7_0, 3_1\}\} \\ \{\{0_1, 1_1\}, \{2_1, 5_1\}\} \quad \{\{0_1, 4_1\}, \{7_1, 3_0\}\}$$

A $(\mathbb{Z}_{11} \times [2])$ -base-set for $(2^{11}, 2)$ EKGDD:

$$\{\{0_1, 6_2\}, \{1_1, 2_1\}\} \quad \{\{0_1, 7_2\}, \{6_2, 9_2\}\} \\ \{\{0_1, 2_1\}, \{1_2, 8_1\}\} \quad \{\{0_1, 10_2\}, \{2_2, 3_2\}\} \\ \{\{0_1, 1_2\}, \{7_2, 4_1\}\}$$

A $(\mathbb{Z}_{15} \times [2])$ -base-set for $(2^{15}, 2)$ EKGDD:

$$\{\{0_1, 8_2\}, \{1_1, 2_1\}\} \quad \{\{0_1, 9_2\}, \{8_2, 11_2\}\} \\ \{\{0_1, 2_1\}, \{12_2, 5_1\}\} \quad \{\{0_1, 10_2\}, \{13_2, 7_1\}\} \\ \{\{0_1, 3_1\}, \{4_2, 5_2\}\} \quad \{\{0_1, 5_1\}, \{14_2, 9_1\}\} \\ \{\{8_2, 10_2\}, \{14_2, 3_2\}\}$$

A $(\mathbb{Z}_{19} \times [2])$ -base-set for $(2^{19}, 2)$ EKGDD:

$$\{\{0_1, 10_2\}, \{1_1, 2_1\}\} \quad \{\{0_1, 11_2\}, \{10_2, 13_2\}\} \\ \{\{0_1, 2_1\}, \{14_2, 5_1\}\} \quad \{\{0_1, 12_2\}, \{15_2, 16_2\}\} \\ \{\{0_1, 3_1\}, \{7_1, 13_1\}\} \quad \{\{0_1, 13_2\}, \{8_1, 4_2\}\} \\ \{\{0_1, 14_2\}, \{1_2, 6_2\}\} \quad \{\{0_1, 5_1\}, \{3_2, 7_2\}\} \\ \{\{0_1, 4_2\}, \{11_2, 18_2\}\}$$

A $(\mathbb{Z}_{23} \times [2])$ -base-set for $(2^{23}, 2)$ EKGDD:

$$\{\{0_1, 12_2\}, \{1_1, 2_1\}\} \quad \{\{0_1, 13_2\}, \{12_2, 15_2\}\} \\ \{\{0_1, 2_1\}, \{16_2, 5_1\}\} \quad \{\{0_1, 14_2\}, \{17_2, 18_2\}\} \\ \{\{0_1, 3_1\}, \{7_1, 22_2\}\} \quad \{\{0_1, 4_1\}, \{13_2, 10_1\}\} \\ \{\{0_1, 16_2\}, \{8_1, 14_1\}\} \quad \{\{0_1, 17_2\}, \{12_1, 7_2\}\} \\ \{\{0_1, 21_2\}, \{4_2, 6_2\}\} \quad \{\{0_1, 6_2\}, \{20_2, 1_2\}\} \\ \{\{0_1, 10_2\}, \{21_2, 3_2\}\}$$

A $(\mathbb{Z}_5 \cup \{\infty\}) \times [2]$ -base-set for $(2^6, 2)$ EKGDD:

$$\{\{0_1, \infty_2\}, \{2_1, 1_2\}\} \quad \{\{0_1, 2_2\}, \{3_2, 4_2\}\} \\ \{\{\infty_1, 0_1\}, \{1_1, 2_2\}\}$$

A $(\mathbb{Z}_7 \cup \{\infty\}) \times [2]$ -base-set for $(2^8, 2)$ EKGDD:

$$\{\{\infty_1, 0_1\}, \{1_1, 2_2\}\} \quad \{\{0_1, 1_1\}, \{3_1, 5_2\}\} \\ \{\{0_1, 3_2\}, \{1_2, 6_2\}\} \quad \{\{0_1, 4_2\}, \{\infty_2, 3_2\}\}$$

A $(\mathbb{Z}_9 \cup \{\infty\}) \times [2]$ -base-set for $(2^{10}, 2)$ EKGDD:

$$\{\{\infty_1, 0_1\}, \{1_1, 2_2\}\} \quad \{\{0_1, 1_1\}, \{3_1, 5_2\}\} \\ \{\{0_1, 2_1\}, \{3_2, 8_2\}\} \quad \{\{0_1, \infty_2\}, \{4_1, 7_2\}\} \\ \{\{0_2, 1_2\}, \{2_2, 4_2\}\}$$

A $(\mathbb{Z}_{11} \cup \{\infty\}) \times [2]$ -base-set for $(2^{12}, 2)$ EKGDD:

$$\{\{\infty_1, 0_1\}, \{1_1, 2_2\}\} \quad \{\{0_1, 1_1\}, \{3_1, 5_1\}\} \\ \{\{0_1, 3_1\}, \{1_2, 6_2\}\} \quad \{\{0_1, 2_2\}, \{\infty_2, 5_2\}\} \\ \{\{0_1, 3_2\}, \{8_2, 10_2\}\} \quad \{\{0_1, 5_2\}, \{4_2, 7_2\}\}$$

A $(\mathbb{Z}_{13} \cup \{\infty\}) \times [2]$ -base-set for $(2^{14}, 2)$ EKGDD:

$$\{\{\infty_1, 0_1\}, \{1_1, 2_2\}\} \quad \{\{0_1, 1_1\}, \{3_1, 5_1\}\} \\ \{\{0_1, 3_1\}, \{1_2, 6_2\}\} \quad \{\{0_1, 4_1\}, \{8_2, 9_2\}\} \\ \{\{0_1, \infty_2\}, \{6_1, 12_2\}\} \quad \{\{0_1, 5_2\}, \{7_2, 10_2\}\} \\ \{\{0_2, 2_2\}, \{3_2, 9_2\}\}$$

A $(\mathbb{Z}_{17} \cup \{\infty\}) \times [2]$ -base-set for $(2^{18}, 2)$ EKGDD:

$$\{\{\infty_1, 0_1\}, \{1_1, 2_2\}\} \quad \{\{0_1, 1_1\}, \{3_1, 5_1\}\} \\ \{\{0_1, 3_1\}, \{9_1, 1_2\}\} \quad \{\{0_1, 4_1\}, \{3_2, 8_2\}\} \\ \{\{0_1, 5_1\}, \{10_2, 11_2\}\} \quad \{\{0_1, \infty_2\}, \{7_1, 9_2\}\} \\ \{\{0_1, 3_2\}, \{7_2, 13_2\}\} \quad \{\{0_1, 11_2\}, \{12_2, 14_2\}\} \\ \{\{0_2, 3_2\}, \{5_2, 9_2\}\}$$

2. BASE-SETS FOR $(3^m, 3)$ EKGDD

A $(\mathbb{Z}_7 \times [3])$ -base-set for $(3^7, 3)$ EKGDD:

$$\{\{0_1, 5_2, 3_3\}, \{6_2, 4_1, 1_3\}\} \quad \{\{0_1, 6_2, 5_3\}, \{4_3, 2_1, 3_2\}\} \\ \{\{0_1, 1_3, 4_2\}, \{5_3, 2_2, 6_1\}\}$$

A $(\mathbb{Z}_{11} \times [3])$ -base-set for $(3^{11}, 3)$ EKGDD:

$$\{\{0_0, 1_0, 2_1\}, \{3_0, 5_0, 8_2\}\} \quad \{\{0_0, 2_2, 9_2\}, \{4_2, 5_1, 10_2\}\} \\ \{\{0_0, 3_0, 7_1\}, \{4_1, 5_2, 6_2\}\} \quad \{\{0_0, 3_1, 10_2\}, \{1_0, 7_1, 9_1\}\} \\ \{\{0_0, 5_1, 8_2\}, \{1_2, 3_1, 6_1\}\}$$

A $(\mathbb{Z}_7 \cup \{\infty\}) \times [3]$ -base-set for $(3^8, 3)$ EKGDD:

$$\{\{\infty_1, 0_1, 1_2\}, \{2_1, 4_2, 3_3\}\} \quad \{\{0_1, \infty_2, 3_3\}, \{1_1, 5_2, 6_3\}\} \\ \{\{0_1, 3_2, 6_3\}, \{2_2, \infty_3, 4_3\}\} \quad \{\{1_1, 0_2, 5_3\}, \{4_1, 2_2, 6_3\}\}$$

A $(\mathbb{Z}_3 \times \mathbb{Z}_3 \times [3])$ -base-set for $(3^9, 3)$ EKGDD:

$$\{\{(0, 2)_1, (1, 0)_1, (1, 2)_1\}, \{(2, 0)_1, (0, 1)_2, (0, 0)_3\}\} \\ \{\{(2, 1)_1, (2, 0)_2, (1, 0)_3\}, \{(0, 0)_2, (0, 2)_2, (2, 2)_2\}\} \\ \{\{(0, 1)_1, (2, 1)_2, (0, 2)_3\}, \{(0, 0)_3, (1, 0)_3, (1, 1)_3\}\} \\ \{\{(0, 0)_1, (1, 2)_2, (2, 1)_3\}, \{(0, 2)_1, (2, 0)_2, (1, 1)_3\}\}$$