

Structure constants of the Lie Algebra:

$$(0, e^{35}, 0, \lambda e^{15}, 0, (-1 + \lambda)e^{13})$$

Symplectic form

$$\omega = e^{12} + e^{34} + e^{56}$$

Derivatives of 3-forms

$$d(e^{246}) = (1.0 - \lambda)e^{1234} + \lambda e^{1256} + (-1.0)e^{3456}$$

$$d(e^{234}) = \lambda e^{1235}$$

$$d(e^{256}) = (1.0 - \lambda)e^{1235}$$

$$d(e^{124}) = e^{1345}$$

$$d(e^{456}) = (-1 + \lambda)e^{1345}$$

$$d(e^{126}) = (-1.0)e^{1356}$$

$$d(e^{346}) = \lambda e^{1356}$$

$$Ker(d^3) \supset \{e^{123}, e^{125}, e^{134}, e^{135}, e^{136}, e^{145}, e^{146}, e^{156}, e^{235}, e^{236}, e^{245}, e^{345}, e^{356}, \}$$

Derivatives of 2-forms

$$d(e^{26}) = (-1.0 + \lambda)e^{123} + e^{356}$$

$$d(e^{24}) = \lambda e^{125} + (-1.0)e^{345}$$

$$d(e^{46}) = (1.0 - \lambda)e^{134} + \lambda e^{156}$$

$$d(e^{12}) = (-1.0)e^{135}$$

$$d(e^{34}) = \lambda e^{135}$$

$$d(e^{56}) = (1.0 - \lambda)e^{135}$$

$$Ker(d^2) \supset \{e^{13}, e^{14}, e^{15}, e^{16}, e^{23}, e^{25}, e^{35}, e^{36}, e^{45}, \}$$

$d\Lambda d$ of 3-forms

$$d\Lambda d(e^{246}) = (-1.0 - \lambda^2 + (1.0 - \lambda)(-1 + \lambda))e^{135}$$

Primitive elements

$$\omega \wedge e^{125} = e^{12345}, \omega \wedge e^{345} = e^{12345},$$

$$\omega \wedge e^{126} = e^{12346}, \omega \wedge e^{346} = e^{12346},$$

$$\omega \wedge e^{123} = e^{12356}, \omega \wedge e^{356} = e^{12356},$$

$$\omega \wedge e^{124} = e^{12456}, \omega \wedge e^{456} = e^{12456},$$

$$\omega \wedge e^{134} = e^{13456}, \omega \wedge e^{156} = e^{13456};$$

$$\omega \wedge e^{234} = e^{23456}, \omega \wedge e^{256} = e^{23456};$$

$$\omega \wedge e^{135} = \omega \wedge e^{136} = \omega \wedge e^{145} = \omega \wedge e^{146} = \omega \wedge e^{235} = \omega \wedge e^{236} = \omega \wedge e^{245} = \omega \wedge e^{246} = 0.$$

Structure constants of the Lie Algebra:

$$(0, (-1.0)e^{13} + ((2.0)\frac{\lambda}{1+\lambda^2})e^{35}, 0, ((2.0)\frac{\lambda}{1+\lambda^2})e^{15}, 0, (\frac{1}{1+\lambda^2})e^{35})$$

Symplectic form

$$\omega = e^{12} + e^{34} + e^{56}$$

Derivatives of 3-forms

$$d(e^{126}) = (\frac{1}{1+\lambda^2})e^{1235} + (-(2.0)\frac{\lambda}{1+\lambda^2})e^{1356}$$

$$d(e^{234}) = ((2.0)\frac{\lambda}{1+\lambda^2})e^{1235}$$

$$d(e^{246}) = ((2.0)\frac{\lambda}{1+\lambda^2})e^{1256} + (-1.0)e^{1346} + (-\frac{1}{1+\lambda^2})e^{2345} + (-(2.0)\frac{\lambda}{1+\lambda^2})e^{3456}$$

$$d(e^{124}) = ((2.0)\frac{\lambda}{1+\lambda^2})e^{1345}$$

$$d(e^{146}) = (-\frac{1}{1+\lambda^2})e^{1345}$$

$$d(e^{245}) = (-1.0)e^{1345}$$

$$d(e^{256}) = (-1.0)e^{1356}$$

$$d(e^{346}) = ((2.0)\frac{\lambda}{1+\lambda^2})e^{1356}$$

$$Ker(d^3) \supset \{e^{123}, e^{125}, e^{134}, e^{135}, e^{136}, e^{145}, e^{156}, e^{235}, e^{236}, e^{345}, e^{356}, e^{456}, \}$$

Derivatives of 2-forms

$$d(e^{24}) = ((2.0)\frac{\lambda}{1+\lambda^2})e^{125} + (-1.0)e^{134} + (-(2.0)\frac{\lambda}{1+\lambda^2})e^{345}$$

$$d(e^{12}) = (-(2.0)\frac{\lambda}{1+\lambda^2})e^{135}$$

$$d(e^{16}) = (-\frac{1}{1+\lambda^2})e^{135}$$

$$d(e^{25}) = (-1.0)e^{135}$$

$$d(e^{34}) = ((2.0)\frac{\lambda}{1+\lambda^2})e^{135}$$

$$d(e^{26}) = (-1.0)e^{136} + (-\frac{1}{1+\lambda^2})e^{235} + ((2.0)\frac{\lambda}{1+\lambda^2})e^{356}$$

$$d(e^{46}) = ((2.0)\frac{\lambda}{1+\lambda^2})e^{156} + (\frac{1}{1+\lambda^2})e^{345}$$

$$Ker(d^2) \supset \{e^{13}, e^{14}, e^{15}, e^{23}, e^{35}, e^{36}, e^{45}, e^{56}, \}$$

$d\Lambda d$ of 3-forms

$$d\Lambda d(e^{246}) = (-(8.0)\frac{\lambda^2}{1+\lambda^2} + 2\frac{1}{1+\lambda^2})e^{135}$$

Primitive elements

$$\omega \wedge e^{125} = e^{12345}, \omega \wedge e^{345} = e^{12345},$$

$$\omega \wedge e^{126} = e^{12346}, \omega \wedge e^{346} = e^{12346},$$

$$\omega \wedge e^{123} = e^{12356}, \omega \wedge e^{356} = e^{12356},$$

$$\omega \wedge e^{124} = e^{12456}, \omega \wedge e^{456} = e^{12456},$$

$$\omega \wedge e^{134} = e^{13456}, \omega \wedge e^{156} = e^{13456},$$

$$\omega \wedge e^{234} = e^{23456}, \omega \wedge e^{256} = e^{23456},$$

$$\omega \wedge e^{135} = \omega \wedge e^{136} = \omega \wedge e^{145} = \omega \wedge e^{146} = \omega \wedge e^{235} = \omega \wedge e^{236} = \omega \wedge e^{245} = \omega \wedge e^{246} = 0.$$