Strain data calculated using the Pyrite method of Durney and Ramsey (1973).
Calculations based on measurements made in the field where;
l_0 = undeformed length (Pyrite radius)
l_1 = deformed length (Pyrite radius + fibre length)

elongation (e_1) = $(l_1 - l_0) \div l_0$

Stretch = $e_1 + 1$

$$e_1 + 1 = ((l_1 - l_0) \div l_0) + 1$$

$$= ((l_1 - l_0) \div l_0) + (l_0 / l_0)$$

$$= (l_1 / l_0)$$

Assuming constant volume plane strain

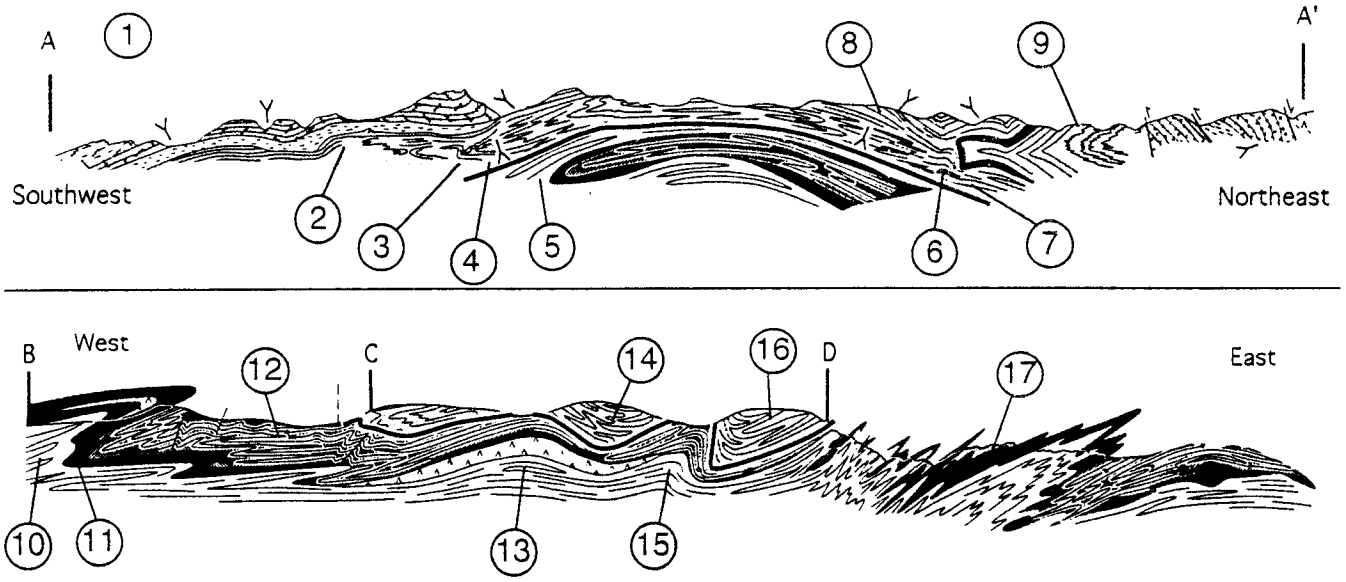
$$e_3 + 1 = 1 \div (e_1 + 1)$$

Strain ratio $X/Z = ((e_1 + 1)) \div (1 \div (e_1 + 1))$

$$= (e_1 + 1)^2$$

$$= (l_1 / l_0)^2$$

Reference : DURNEY, D. W. & RAMSAY, J. G. 1973. Incremental strains measured by syntectonic crystal growths. *In* Gravity and Tectonics (edited by DE JONG, K. A. & SCHOLTEN, R.). Wiley, New York, pp 37-62.


A
A'
1
2
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Southwest
Northeast
B
West
C
D
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17

Strain data 1	*l* 1	*l* 0	*l1/l0*	Plane Strain Constant Vol.
	115.0	21.0	11.5	
	10.0	3.0	7.0	Strain Ratio
	110.0	12.0	9.2	90.7
	68.0	7.0	9.1	
	66.0	7.0	9.4	
	40.0	4.0	10.0	
	28.0	3.0	9.3	
	36.0	4.0	9.0	
	38.0	3.5	10.9	
	29.0	3.0	9.7	
	55.0	6.0	9.2	
	30.0	3.0	10.0	
	n=12		Av. stretch =	9.5
			Std. Dev. =	1.1

Strain data 2	*l* 1	*l* 0	*l1/l0*	Plane Strain Constant Vol.
	3.0	0.4	7.4	
	3.6	0.6	6.4	Strain Ratio
	2.5	0.6	4.5	40.1
	4.0	0.7	5.9	
	2.0	0.4	5.0	
	3.4	0.7	4.7	
	1.0	0.2	4.0	
	3.1	0.4	7.1	
	0.8	0.1	5.7	
	4.2	0.6	7.1	
	5.8	0.8	7.6	
	2.8	0.4	7.7	
	2.3	0.6	4.1	
	0.4	0.1	6.8	
	0.4	0.1	6.7	
	0.7	0.1	11.0	
	0.4	0.1	5.9	
	0.5	0.1	6.5	
	0.4	0.1	8.0	
	0.4	0.1	4.8	
	n = 20		Av. stretch =	6.3
			Std. Dev. =	1.6

Strain data 3	*l* 1	*l* 0	*l1/l0*	Plane Strain Constant Vol.
	9.0	1.0	9.0	
	7.0	1.5	4.7	Strain Ratio
	7.5	0.7	10.7	78.2
	9.7	1.0	9.7	

	9.0	1.2	7.5	
	9.8	1.0	9.8	
	8.0	0.7	11.4	
	9.5	1.2	7.9	
	n = 8		Av. stretch =	8.8
			Std. Dev. =	2.0

Strain data 4	*l* 1	*l* 0	*l1/l0*	Plane Strain Constant Vol.
	16.0	1.5	10.7	
	11.0	0.9	12.2	Strain Ratio
	11.8	1.0	11.8	133.7
	n = 3		Av. stretch =	11.6
			Std. Dev. =	0.7

Strain data 5	*l* 1	*l* 0	*l1/l0*	Plane Strain Constant Vol.
	50.0	5.0	10.0	
	135.0	15.0	9.0	Strain Ratio
	63.0	6.0	10.5	121.0
	13.0	1.5	8.7	
	63.0	6.0	10.5	
	31.0	2.5	12.4	
	27.0	3.0	9.0	
	35.0	3.0	11.7	
	35.0	2.0	17.5	
	33.0	3.0	11.0	
	n=10		Av. stretch =	11.0
			Std. Dev. =	2.4

Strain data 6	*l* 1	*l* 0	*l1/l0*	Plane Strain Constant Vol.
	9.0	1.0	9.0	
	16.0	1.0	16.0	Strain Ratio
	20.0	3.7	5.4	173.8
	15.5	1.2	12.9	
	15.0	0.8	18.8	
	16.0	1.5	10.7	
	30.0	1.5	20.0	
	17.0	1.2	14.2	
	45.0	3.6	12.5	
	12.0	1.5	8.0	
	19.0	2.0	9.5	
	17.0	1.0	17.0	
	35.0	2.0	17.5	
	n = 13		Av. stretch =	13.2

			Std. Dev. =	4.5

Strain data 7	*l* 1	*l* 0	*l1/l0*	Plane Strain Constant Vol.
	11.0	2.5	4.4	
	4.0	0.7	5.7	Strain Ratio
	8.0	1.0	8.0	75.6
	12.0	1.5	8.0	
	7.2	1.2	6.0	
	12.0	1.5	8.0	
	10.5	0.7	15.0	
	12.8	1.2	10.7	
	12.9	1.5	8.6	
	10.8	1.4	7.7	
	11.4	1.0	11.4	
	11.4	1.4	8.1	
	8.7	0.8	10.9	
	8.8	0.8	11.0	
	13.9	2.0	7.0	
	n = 15		Av. stretch =	8.7
			Std. Dev. =	2.6

Strain data 8	*l* 1	*l* 0	*l1/l0*	Plane Strain Constant Vol.
	32.0	4.0	8.0	
	24.0	4.0	6.0	Strain Ratio
	60.0	10.0	6.0	44.9
	38.0	5.0	7.6	
	84.0	12.0	7.0	
	45.0	8.0	5.6	
	80.0	12.0	6.7	
	n=7		Av. stretch =	6.7
			Std. Dev. =	0.8

Strain data 9	*l* 1	*l* 0	*l1/l0*	Plane Strain Constant Vol.
	8.5	2.5	3.4	
	7.0	2.0	3.5	Strain Ratio
	11.5	3.1	3.7	14.7
	7.2	2.1	3.4	
	10.5	2.2	4.8	
	8.5	2.2	3.9	
	8.0	2.0	4.0	
	8.5	2.2	3.9	
	6.0	1.8	3.3	
	12.5	3.0	4.2	
	7.0	1.8	3.9	
	8.1	2.0	4.1	

	n=12		Av. stretch =	3.8
			Std. Dev. =	0.4

Strain data 10	*l* 1	*l* 0	*l1/l0*	Plane Strain Constant Vol.
	11.7	1.7	6.9	
	9.5	1.5	6.3	Strain Ratio
	4.5	0.7	6.4	27.8
	3.5	0.6	5.8	
	10.0	1.8	5.6	
	2.5	0.7	3.6	
	6.5	1.2	5.4	
	3.5	0.7	5.0	
	3.6	0.5	7.2	
	9.5	2.3	4.1	
	7.0	2.0	3.5	
	8.5	2.5	3.4	
	n = 12		Av. stretch =	5.3
			Std. Dev. =	1.3

Strain data 11	*l* 1	*l* 0	*l1/l0*	Plane Strain Constant Vol.
	4.0	0.7	5.7	
	4.5	1.1	4.1	Strain Ratio
	11.2	1.5	7.5	27.3
	5.5	1.1	5.0	
	13.0	3.0	4.3	
	16.0	4.0	4.0	
	12.0	2.0	6.0	
	13.0	2.5	5.2	
	n = 8		Av. stretch =	5.2
			Std. Dev. =	1.1

Strain data 12	*l* 1	*l* 0	*l1/l0*	Plane Strain Constant Vol.
	53.0	6.0	8.8	
	55.0	7.0	7.9	Strain Ratio
	55.0	6.0	9.2	81.7
	85.0	9.0	9.4	
	45.0	5.0	9.0	
	55.0	5.0	11.0	
	45.0	6.0	7.5	
	38.0	4.0	9.5	
	n=8		Av. stretch =	9.0
			Std. Dev. =	1.0

Strain data 13	*l* 1	*l* 0	*l1/l0*	Plane Strain Constant Vol.
	10.2	1.1	9.3	
	17.0	1.5	11.3	Strain Ratio
	11.9	1.7	7.0	112.4
	15.0	1.6	9.4	
	17.7	1.5	11.8	
	18.5	1.0	18.5	
	14.5	1.2	12.1	
	14.5	1.8	8.1	
	16.6	1.8	9.2	
	7.5	0.8	9.4	
	n=10		Av. stretch =	10.6
			Std. Dev. =	3.2

Strain data 14	*l* 1	*l* 0	*l1/l0*	Plane Strain Constant Vol.
	70.0	8.0	8.8	
	107.0	12.0	8.9	Strain Ratio
	60.0	9.0	6.7	77.4
	125.0	14.0	8.9	
	120.0	20.0	6.0	
	100.0	13.0	7.7	
	210.0	30.0	7.0	
	110.0	10.0	11.0	
	75.0	5.0	15.0	
	160.0	20.0	8.0	
	n=10		Av. stretch =	8.8
			Std. Dev. =	2.5

Strain data 15	*l* 1	*l* 0	*l1/l0*	Plane Strain Constant Vol.
	120.0	18.0	6.7	
	68.0	8.0	8.5	Strain Ratio
	43.0	6.0	7.2	82.0
	50.0	6.0	8.3	
	100.0	7.0	8.3	
	80.0	12.0	6.7	
	80.0	8.0	10.0	
	150.0	20.0	7.5	
	45.0	5.0	9.0	
	100.0	8.0	12.5	
			Av. stretch =	9.1
	n=10		Std. Dev. =	2.4

Strain data 16	*l* 1	*l* 0	*l1/l0*	Plane Strain Constant Vol.
	52.0	5.5	9.5	

26.0	3.5	7.4	Strain Ratio
65.0	9.0	7.2	57.6
33.0	5.0	6.6	
25.0	4.0	6.3	
42.0	5.0	8.4	
21.0	3.0	7.0	
19.0	2.5	7.6	
50.0	6.0	8.3	
		Av. stretch =	7.6
n=9		Std. Dev. =	1.0

Strain data 17	*l* 1	*l* 0	*l1/l0*	Plane Strain Constant Vol.
	6.7	1.0	6.7	
	3.7	0.7	5.3	Strain Ratio
	5.1	1.1	4.6	25.6
	4.0	1.0	4.0	
	2.0	0.5	4.0	
	6.7	1.9	3.5	
	5.9	1.3	4.5	
	4.9	0.8	6.1	
	4.2	0.6	7.0	
	3.8	0.8	4.8	
	2.7	0.6	4.5	
	3.3	1.0	3.3	
	5.2	1.1	4.7	
	5.4	1.1	4.9	
	6.8	0.9	7.6	
	5.2	1.7	3.1	
	7.0	1.2	5.8	
	6.3	1.1	5.7	
	6.5	1.2	5.4	
	6.1	1.1	5.5	
	n = 20		Av. stretch =	5.1
			Std. Dev. =	1.2