一、UCS试验验证----Granite

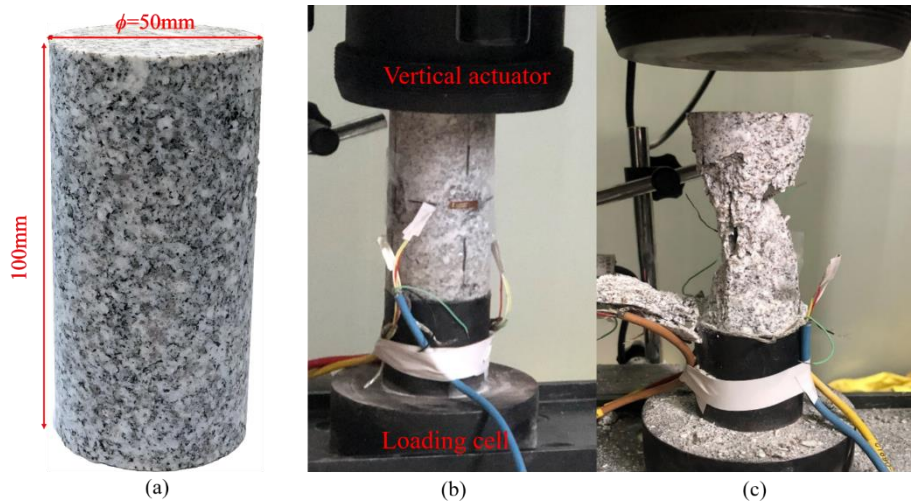


Fig.1 (a) The dimension of three types of rocks, (b) The granite sample before and (c) after the UCS test.

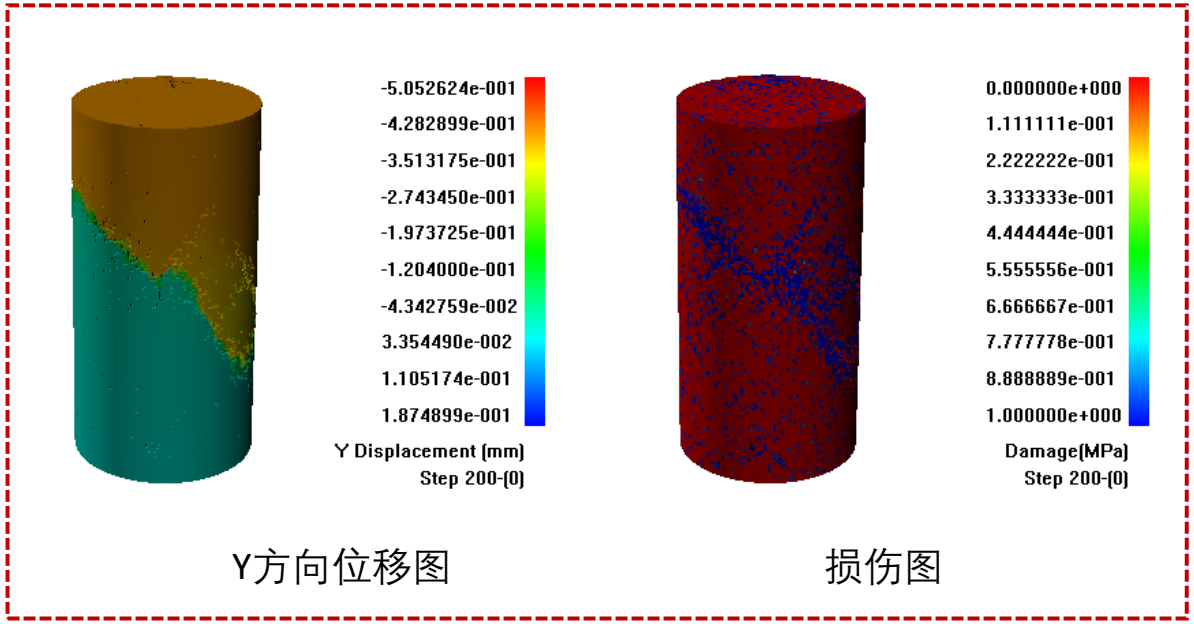
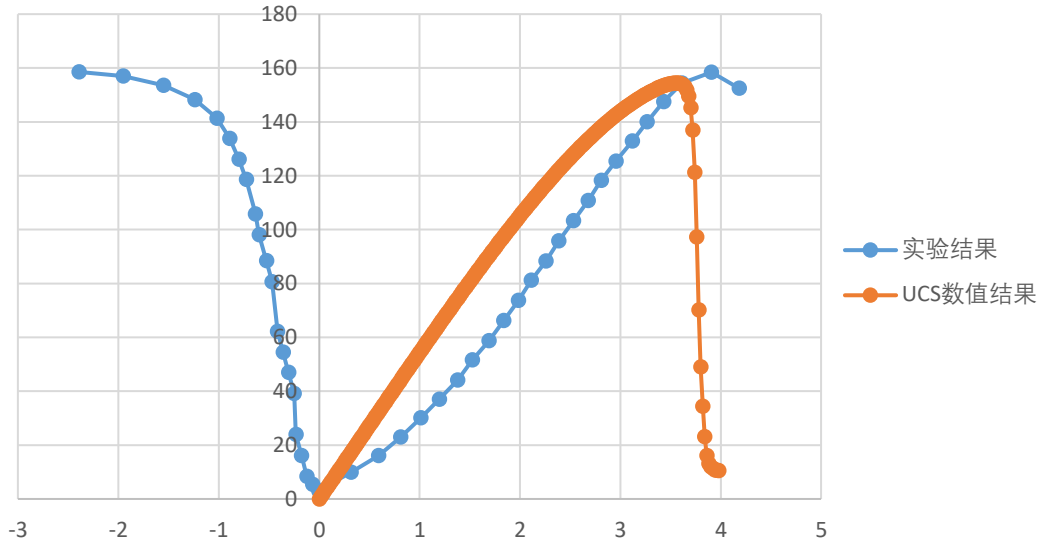


Table 1 Calibrated parameters of intact rock and joint.

Young's modulus (Gpa)	Poisson's ratio	Compressive strength (MPa)	C/T	m
63.215	0.265	425.11	10	3



物理试验与数值试验的单轴压缩荷载-位移曲线对比图

一、UCS试验验证----Marble

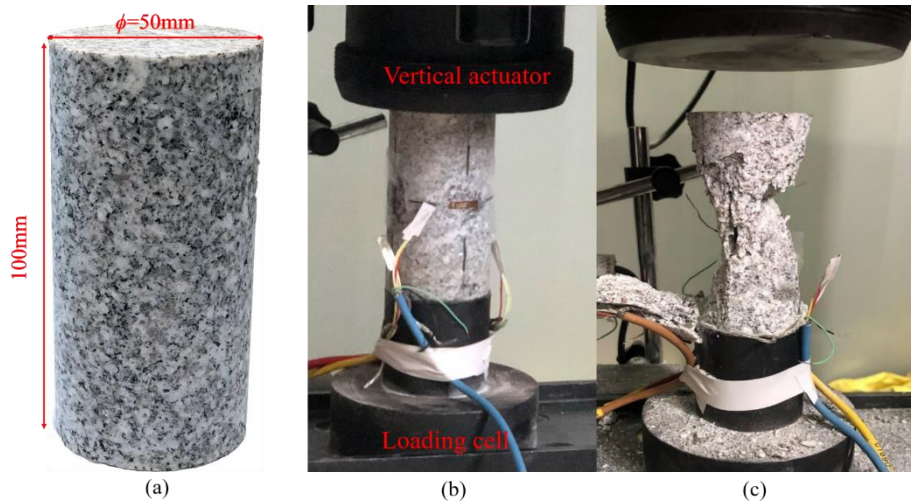


Fig.1 (a) The dimension of three types of rocks, (b) The granite sample before and (c) after the UCS test.

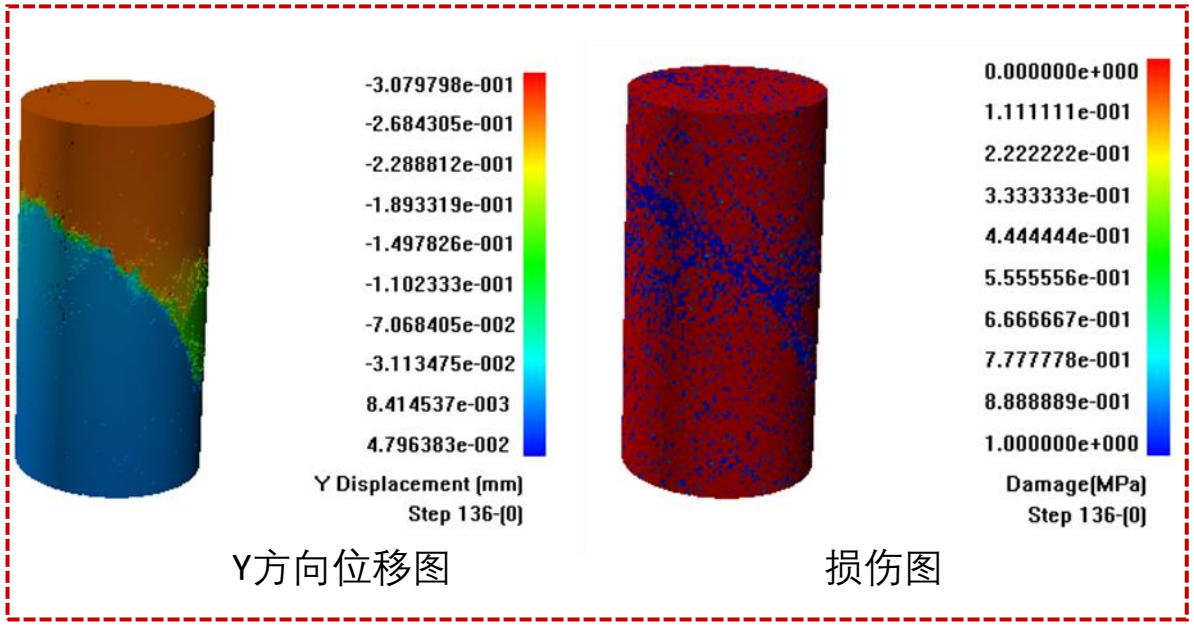
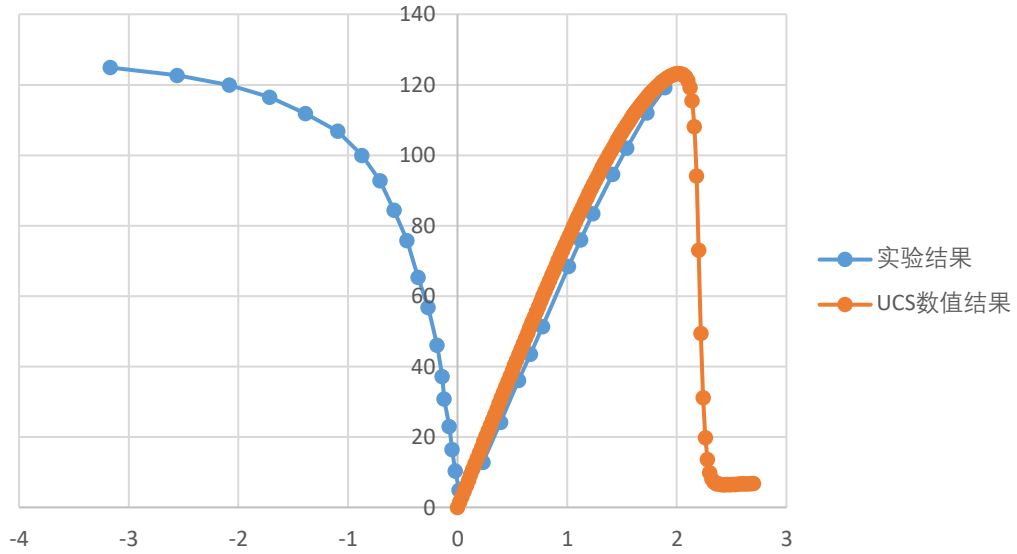


Table 1 Calibrated parameters of intact rock and joint.

Young's modulus (Gpa)	Poisson's ratio	Compressive strength (MPa)	C/T	m
90.18	0.274	335.14	10	3



物理试验与数值试验的单轴压缩荷载-位移曲线对比图

一、UCS试验验证----Red-sandstone

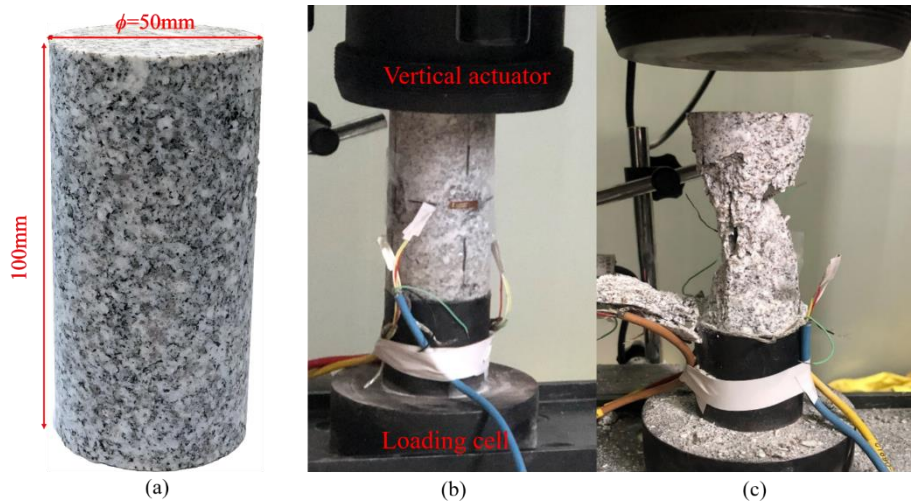


Fig.1 (a) The dimension of three types of rocks, (b) The granite sample before and (c) after the UCS test.

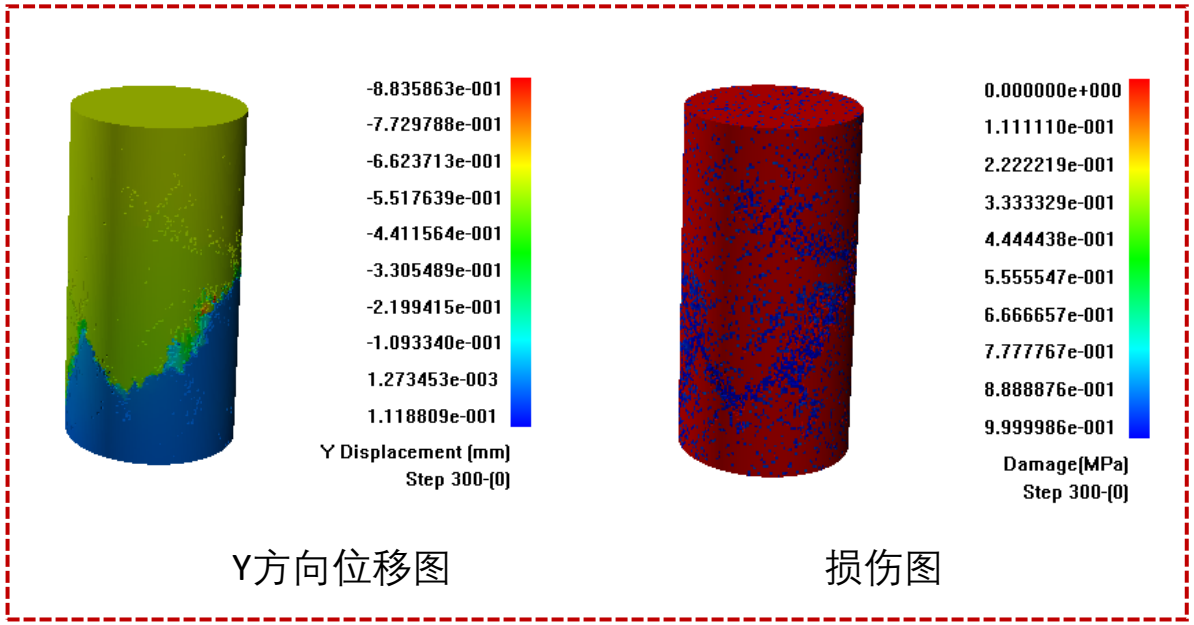
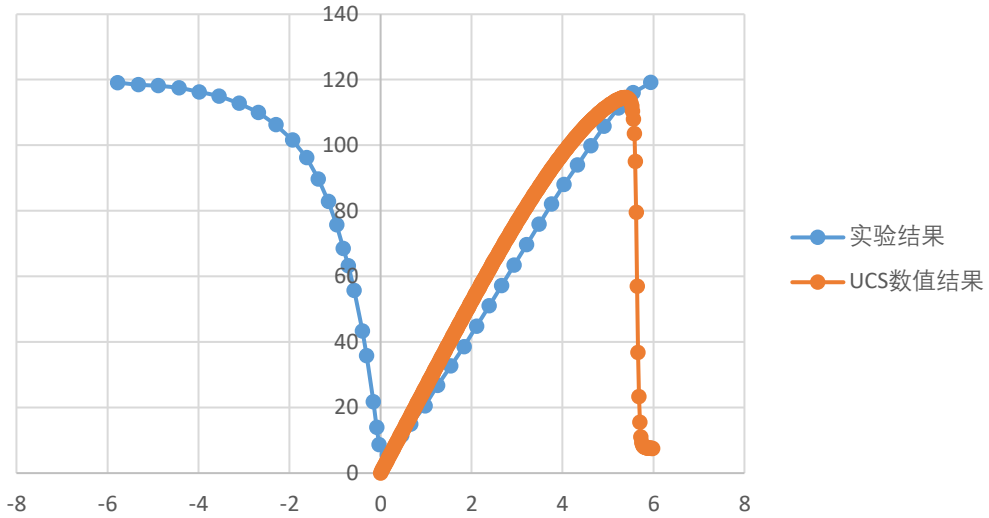


Table 1 Calibrated parameters of intact rock and joint.

Young's modulus (Gpa)	Poisson's ratio	Compressive strength (MPa)	C/T	m
30.593	0.225	319.43	10	3



物理试验与数值试验的单轴压缩荷载-位移曲线对比图

二、巴西劈裂试验验证

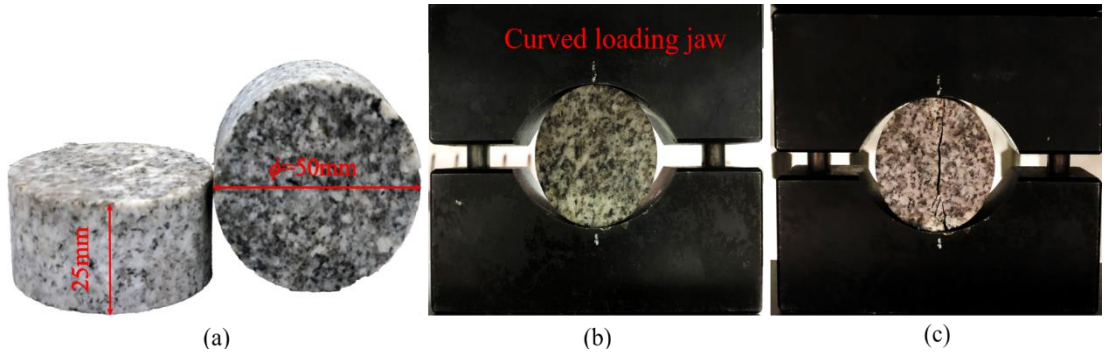
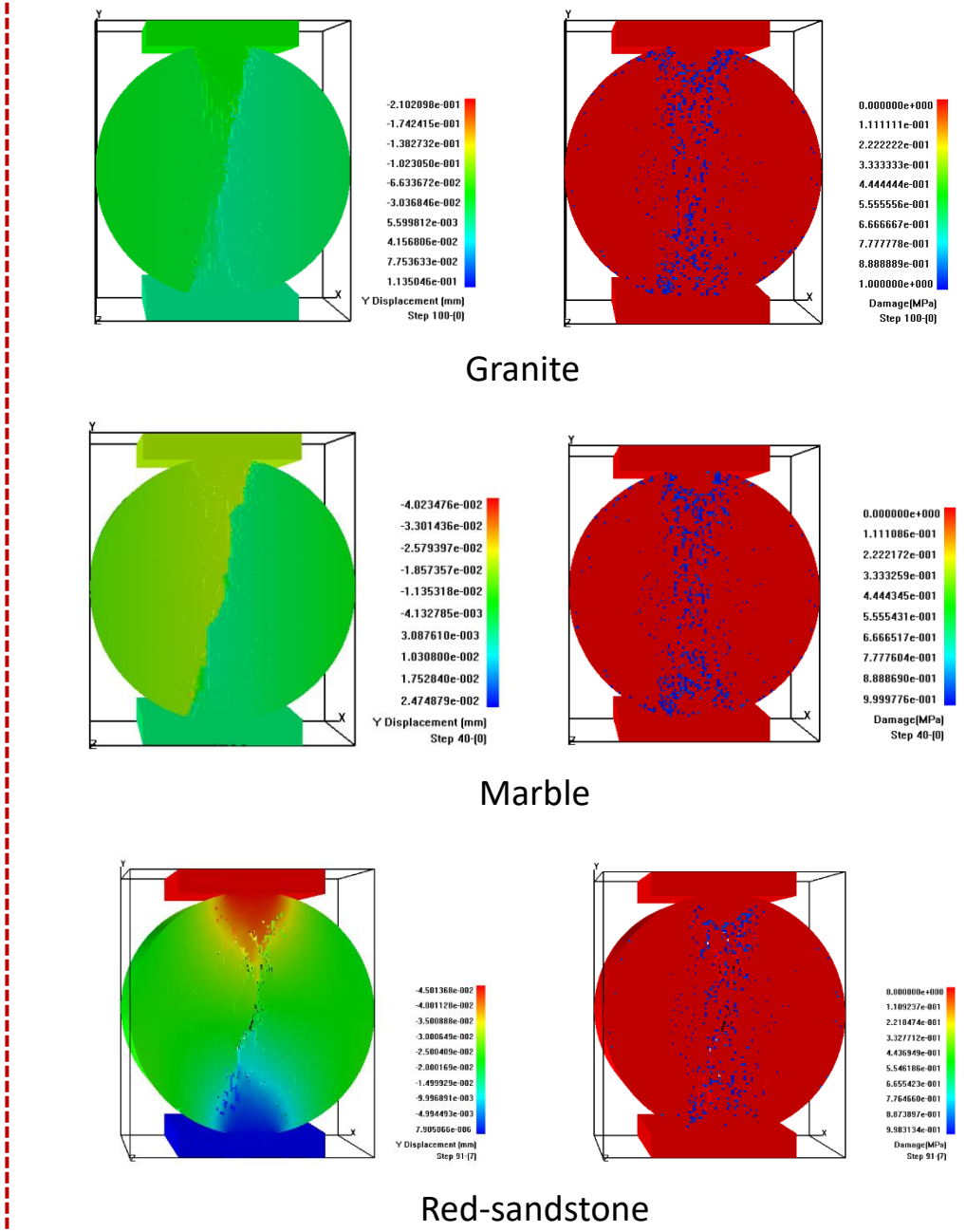


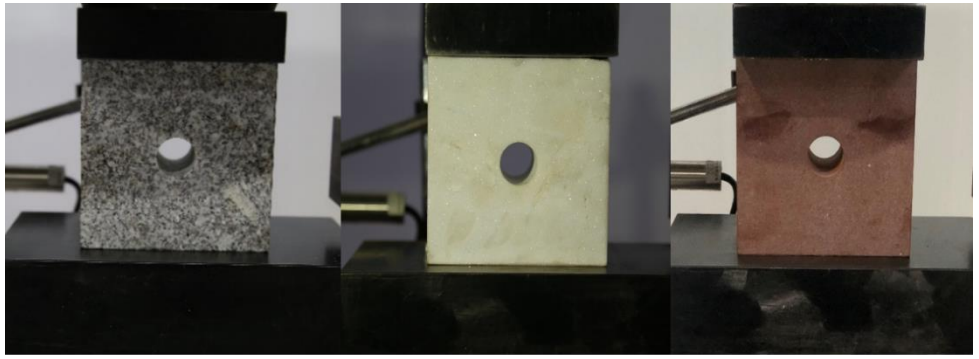
Fig.1 (a) The dimension of three types of rocks, (b) The granite sample before and (c) after the BTS test.

Table 1 Calibrated parameters of intact rock and joint.

		granite	marble	Red-sandstone
Experimental	Load(KN)	13.96	11.89	11.16
	Tensile strength(MPa)	7.19	6.06	5.78
Numerical	Load(KN)	15.5	11.02	11.7
	Tensile strength(MPa)	7.89	5.61	5.96
	C/T	23	25	23



三、单轴压缩数值试验



(a) (b) (c)

Fig.1 Three types of physical models subjected to uniaxial compression

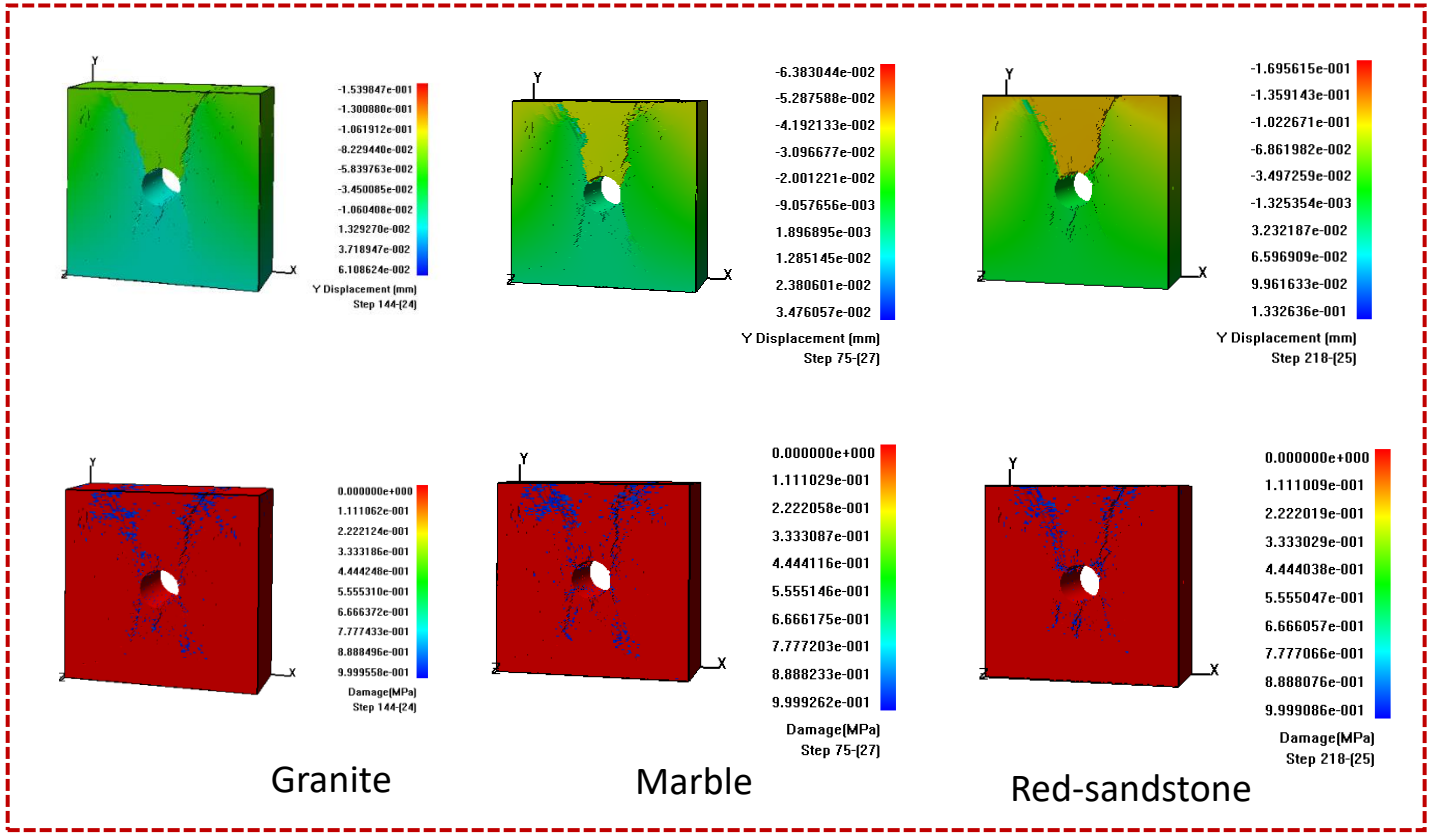
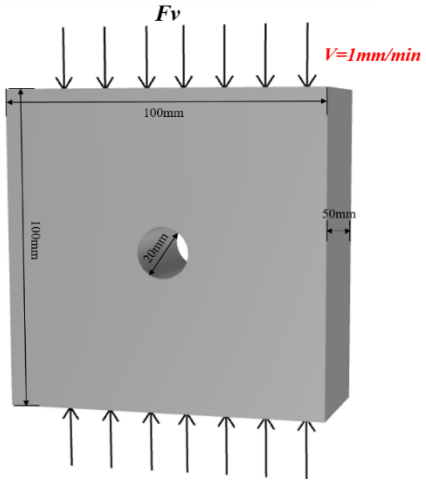


Table 1 Calibrated parameters of intact rock and joint.

parameters	Input parameters					Dimension (mm)	Boundary conditions	Loading rate (mm/min)	Element size (mm)	Peak load (kN)
	Young's modulus (Gpa)	Compressive strength (MPa)	Poisson's ratio	C/T	m					
Granite	63.216	425.11	0.265	23	3	100*100*50	Displacement	1	0.5	172.15
Marble	90.180	335.14	0.274	25	3					126.63
Red-sandstone	30.593	319.43	0.225	23	3					126.449



数值模拟示意图