

附表 1 2 种算法对 6 幅苹果图象的识别结果对比
 Attached table 1 Comparison of recognition results of six apple images by two algorithms

图像编号 Image number	实际圆心坐标 Actual center coordinates	实际半径/ 像素 Actual radius	本文算法		最小外接圆算法	
			Algorithm in this paper		The minimum circumscribed circle algorithm	
			圆心坐标误差	半径误差/像素	圆心坐标误差	半径误差/像素
			Center corrdinates error	Radius error	Center corrdinates error	Radius error
a	(85, 150)	45	(-1, 3)	8	(1, -2)	-6
	(230, 110)	30	(0, 1)	-2	(-13, 2)	-9
	(337, 71)	33	(-3, -3)	0	(0, -1)	-2
	(368, 252)	33	(13, 15)	-2	(15, 34)	-10
	(465, 330)	33	(-1, 1)	0	(6, -1)	-16
	(528, 158)	34	(0, -1)	1	(1, 2)	0
b	(237, 340)	51	(2, 2)	-1	(0, -16)	-3
	(238, 138)	48	(-3, -1)	0	(-1, -1)	1
	(370, 257)	47	(4, -3)	-3	(-22, -16)	-39
	(433, 305)	50	(0, -3)	-3	(41, 32)	-36
	(516, 336)	43	(0, -4)	-1	(-22, -18)	-15
	(566, 365)	42	(-1, 0)	0	(28, 11)	-16
c	(480, 138)	48	(-17, 0)	5	(-11, 1)	-5
	(525, 315)	43	(-14, -2)	3	(-7, -4)	-8
d	(71, 247)	30	(1, 0)	0	(-5, -18)	-12
	(95, 285)	25	(5, -11)	-1	(19, 20)	-17
	(94, 142)	32	(1, -2)	0	(0, 1)	-1
	(336, 182)	21	(0, 0)	0	(5, -1)	2
	(389, 250)	19	(2, 1)	0	(-5, 27)	-12
	(402, 212)	19	(0, 0)	0	(8, -11)	-12
	(541, 338)	24	(4, 0)	0	(5, 4)	1
e	(206, 301)	22	(0, -2)	0	(0, 2)	-1
	(345, 377)	21	(2, 1)	1	(6, -25)	-8
	(341, 345)	20	(0, 1)	0	(2, -7)	-9
	(365, 268)	21	(-1, -2)	-1	(0, 0)	0
	(477, 268)	17	(-2, -1)	0	(2, -1)	3
	(537, 299)	17	(10, 0)	-1	(11, 3)	-7
	(580, 288)	18	(0, -4)	-1	(-6, -11)	11
f	(195, 62)	25	(-2, -2)	-1	(2, 0)	-2
	(283, 93)	29	(-1, -1)	3	(2, 12)	-11
	(290, 67)	24	(1, 0)	0	(5, -14)	-16
	(298, 154)	20	(5, -4)	-1	(3, 4)	-1
	(428, 254)	19	(5, -2)	-2	(2, 9)	1
	(468, 47)	21	(0, 0)	0	(7, 6)	-8