

Question

Investigate how the position of the sun changes the appearance of the snowy mountain slopes.

Find out what factors have the most impact on the visibility of snowy mountains.

Framework

Sun Condition

Light intensity

Clear Sky : $1000w / m^2$

Overcast Sky : $200w / m^2$

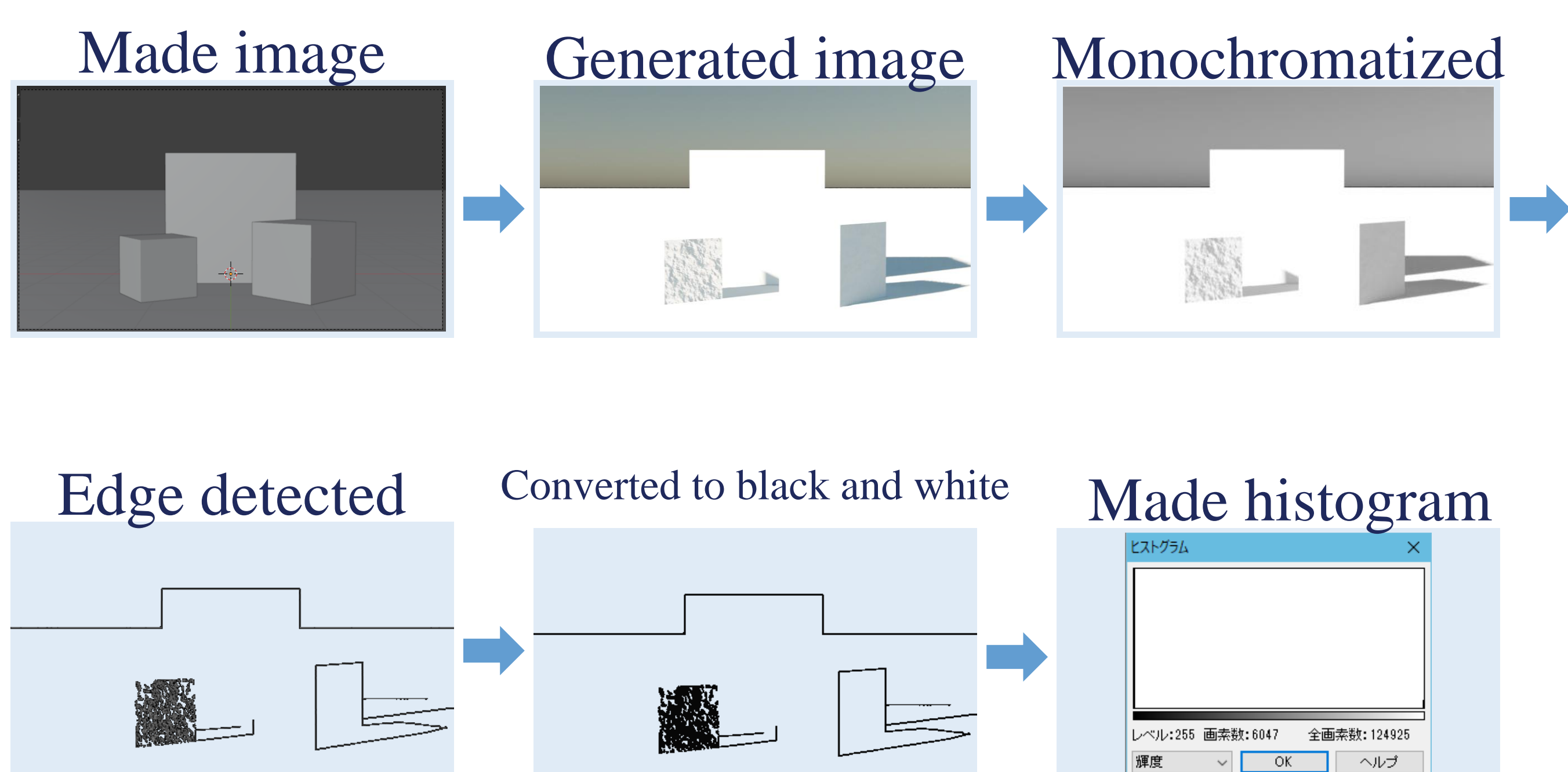
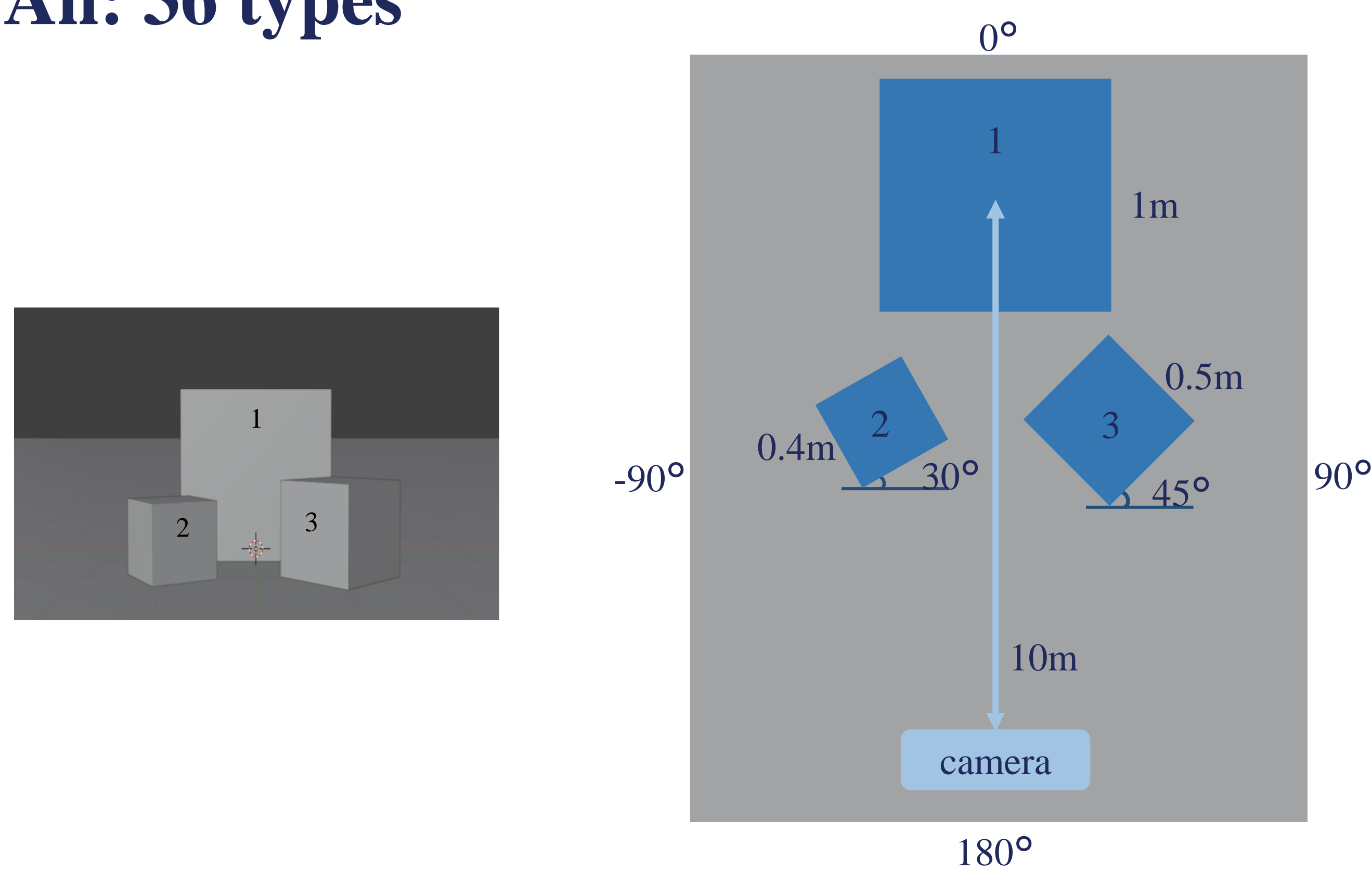
Azimuth

$0^\circ / +60^\circ / +120^\circ / 180^\circ$

Altitude

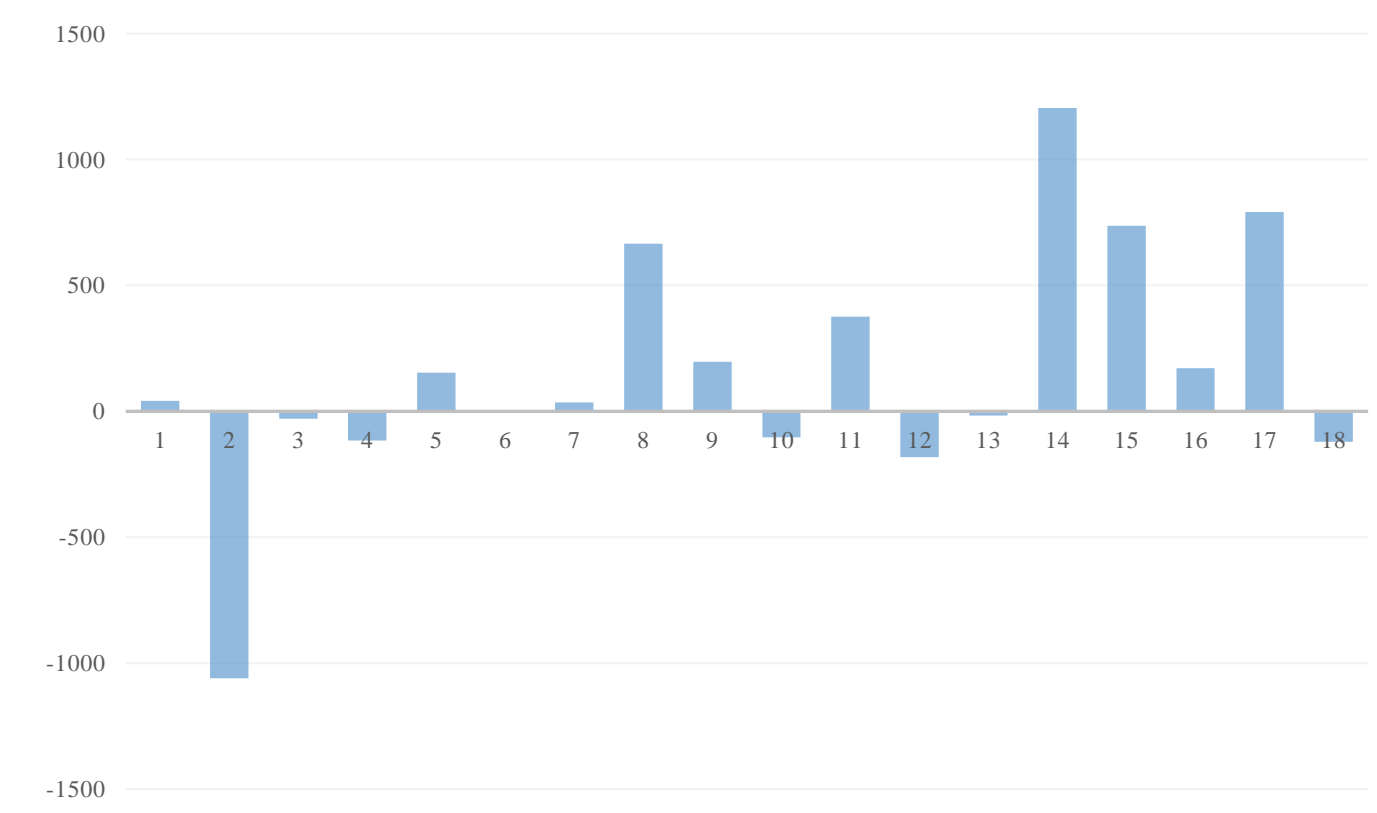
$25^\circ / 47.5^\circ / 70^\circ$

All: 36 types



Finding

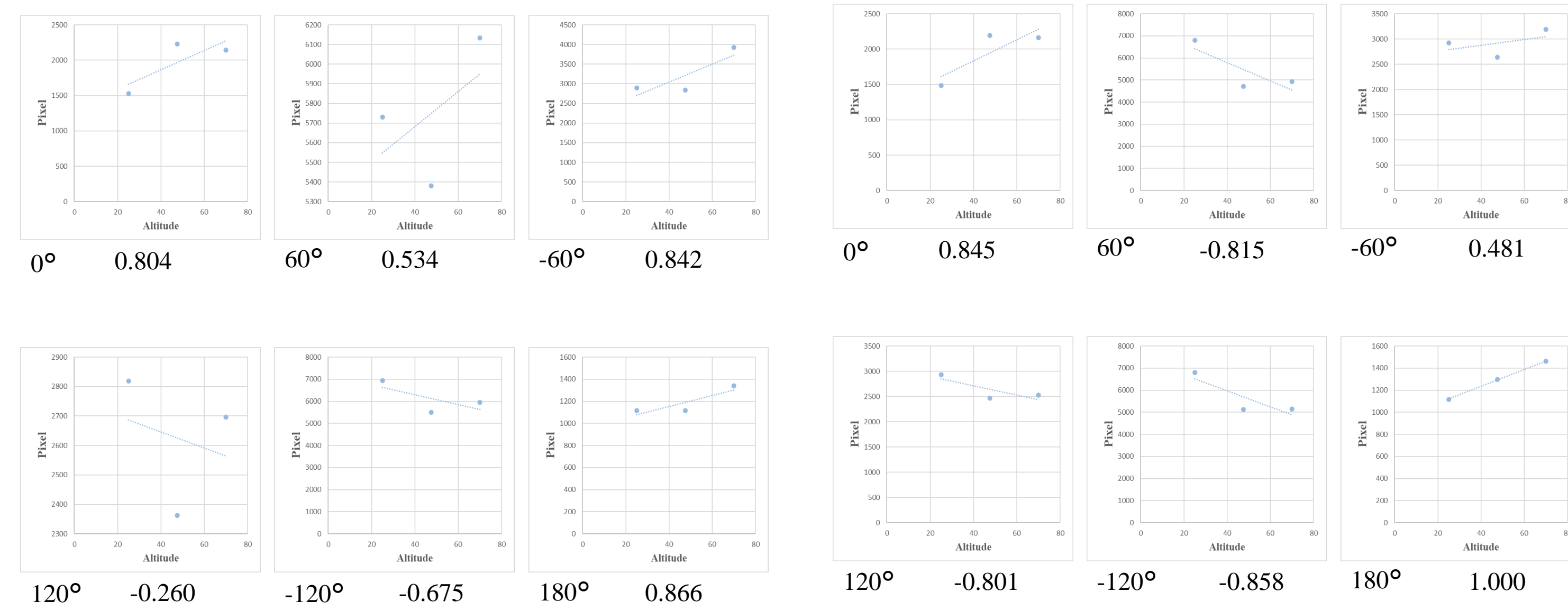
Light intensity	Altitude	Azimuth	Pixel	Absolute value	Light intensity	Altitude	Azimuth	Pixel	
1	200	25	0	1527	42	1000	25	0	1485
2	200	25	60	5731	1060	1000	25	60	6791
3	200	25	-60	2894	30	1000	25	-60	2924
4	200	25	120	2819	116	1000	25	120	2935
5	200	25	-120	6947	153	1000	25	-120	6794
6	200	25	180	1116	1	1000	25	180	1117
7	200	47.5	0	2230	36	1000	47.5	0	2194
8	200	47.5	60	5380	666	1000	47.5	60	4714
9	200	47.5	-60	2838	197	1000	47.5	-60	2641
10	200	47.5	120	2362	103	1000	47.5	120	2465
11	200	47.5	-120	5498	376	1000	47.5	-120	5122
12	200	47.5	180	1116	182	1000	47.5	180	1298
13	200	70	0	2144	17	1000	70	0	2161
14	200	70	60	6134	1205	1000	70	60	4929
15	200	70	-60	3923	737	1000	70	-60	3186
16	200	70	120	2696	171	1000	70	120	2525
17	200	70	-120	5946	792	1000	70	-120	5154
18	200	70	180	1342	121	1000	70	180	1463



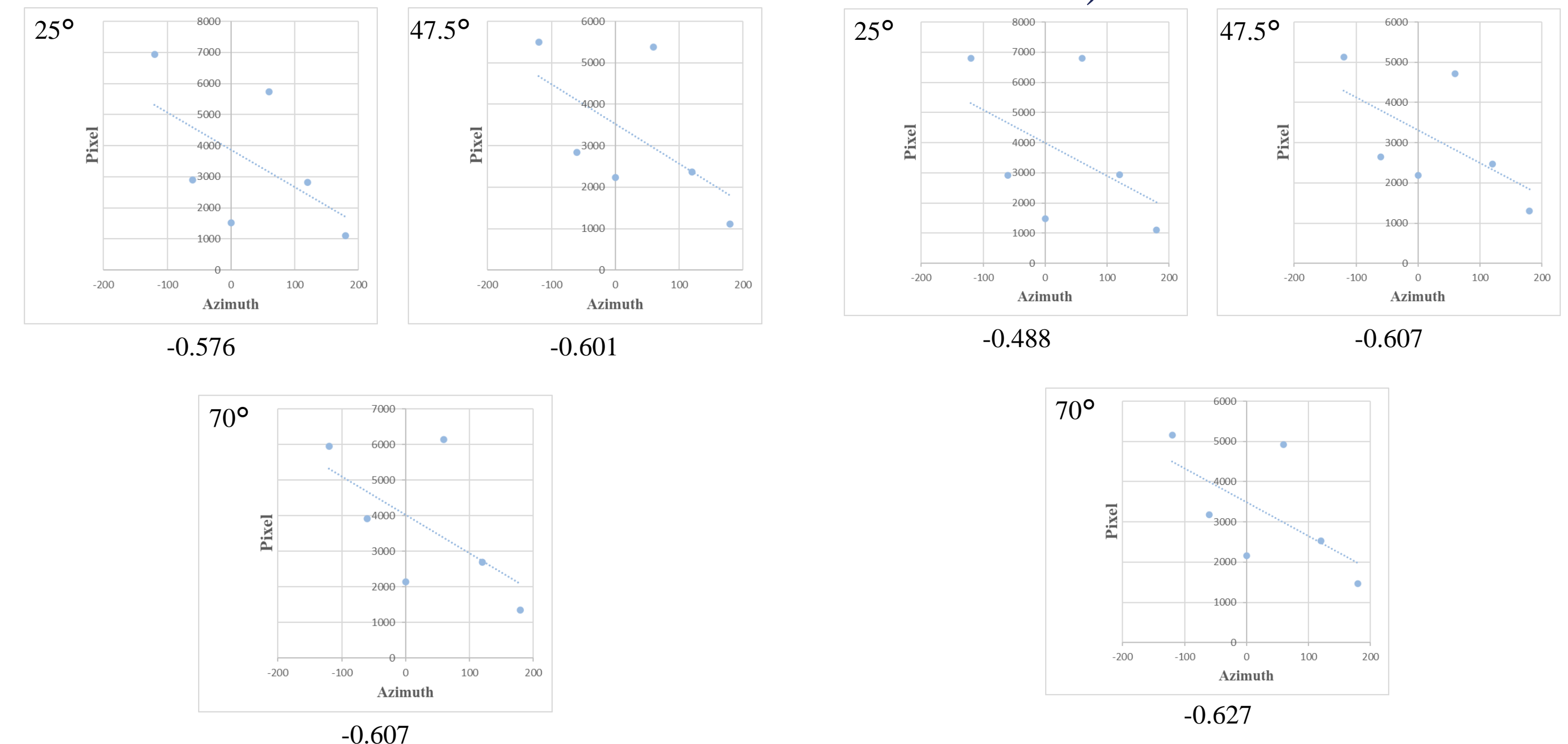
Light intensity : 200

Light intensity : 1000

Correlation (Azimuth & Pixel)



Correlation Altitude & Pixel)



Conclusion

It is impossible to determine which factors have the greatest impact on snow mountain visibility.