

whole fitting curve (the dashed figure), the value of a and b are 109.73 and -0.00776 respectively. From Fig. 4, we can see that the plagioclase solution degree can be divided into two groups, A and B, which reflect two soil groups with different solution degree. The depth boundary between A and B is line c-c' with a depth of 115cm. The corresponding solution degree boundary is about 40% (line d-d'). Based on these characteristics, we divided the saprolite of this section into two general types as listed in table 1.

Classes of solution degree	Depth (cm)	Range of solution degree (%)	Characteristics
I	< 115	14 ~ 40	Large void, irregular particles, good connectivity, roundness, loose
II	≥ 115	40 ~ 77	Small void, poor connectivity, clear profile, dense

Table 1. Classes the plagioclase solution degree and the description of its characteristics.

Using the same method, we also obtain the solution degree of Shi Xiawei section and Guan Tang section in Hong Kong. The test results are shown in Fig. 6.

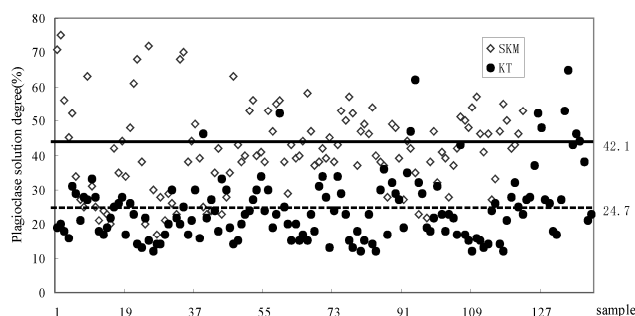


Fig. 6 Statistics of plagioclase solution degree.

We can see that, their plagioclase solution degree are between 15% and 65%, mostly between 15% and 45%. The plagioclase solution degree in Shi Xiawei is higher than that in Guan Tang: the mean value of the former is 42.1%, while the mean value of the latter is 24.7%. Thus it is reasonable that the stability of soil in Shi Xiawei is worse than that in Guan Tang.

V. CONCLUSIONS

It is important to evaluate the weathering degree of saprolite. Different geotechnical measures should be selected according to different weathering degree. Our studies in MA ON SAN, Shi Xiawei and Guan Tang sections of Hong Kong suggest that the plagioclase solution degree is a sensitive index that can accurately reflect the weathering degree of saprolite. However, as we all know, weathering depends on many factors. We don't expect that the plagioclase solution degree can be applied to all saprolite weathering areas, but its potential to characterize the weathering degree should be stressed and the introduction of SEM images seems to be able to open a new prospect to further refine the weathering degree.

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