A-TiC introduces quantitative indexes to boring core observation, which has been performed based mainly on qualitative assessment, to improve reliability of observation results.

### Problems in boring core observation
- Boring core observation is based mainly on qualitative assessment, and therefore it is difficult to understand basis for judgment and it lacks in repeatability.
- Evaluation results differ depending on observers.
- Standard for comparison among plural cores easily becomes vague.

### Introduction of quantitative indexes
- Measuring and digitizing core sample color → Portable spectral colorimeter
- Measuring core sample magnetic susceptibility → Portable susceptibility indicator

### Improving reliability of observation results by supplement of core observation judgment basis
- Judgment basis becomes clear by adding numerical data to the judgment basis such as stratum classification, rock facies classification, weathering classification and rock classification, which reduce evaluation difference by observers.
- When comparing weathering degrees or rock classification among plural cores, the basis for comparison evaluation becomes clearer by adding numeric data.
- It enables to grasp slight difference in weathering degrees and properties for which it is difficult to recognize difference by eye observation with naked eyes.

### Measurement of susceptibility
Susceptibility of bedrock and soil is greatly influenced by type, size and ratio of iron mineral contained.
Generally, in the weathered and altered parts where iron mineral is oxidized and / or hydroxylated, the values are lower than those of the fresh part.

### Digitizing of color
(Image of L*a*b* color system)
"quoted from 'Story of reading colors' by Konica Minolta, Inc."
Object color is digitized with three axes of white - black (L*), red - green (a*), yellow - blue (b*) by using spectrum colorimeter.

### General comparison of susceptibility
- Fresh rock > Alternated rock
- Fresh rock > Weathered rock

---

**Digitizing of color**

<table>
<thead>
<tr>
<th>Color System</th>
<th>Axes</th>
</tr>
</thead>
<tbody>
<tr>
<td>L<em>a</em>b*</td>
<td>L, a, b</td>
</tr>
</tbody>
</table>

![Digitizing of color](image_url)