

Development of PHOTOCEEDS - PHOTOgraphic database of Coastal Engineering Education and Study

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1. Introduction

There is a variety of coastal environment which is vulnerable to tide, waves, storm, and sea level rise around the world. To sustain a shore, coastal engineer suppose to deal with a sand budget around a river mouth, inlet, cliff, and coral reef. However, the coastal engineers, especially young students and un-experienced researchers, face to a difficulty to study many empirical subjects such as coastal geomorphology, wave deformation, nearshore current system, sediment transport, and coastal protection methods. Therefore, a visual database for an educational purpose might be necessary to them and also instructors. In addition, engineers need a set of photographic images to make the audience easy to understand the physical phenomena and mathematics.

The PHOTOCEEDS is a PHOTOgraphic database of Coastal Engineering Education and Study. The first version of the PHOTOCEEDS was made for Japanese engineers. An original photo-database mainly contained the coastal processes, but the later versions of the database contain other topics such as waves and currents. A comparable English version of the PHOTOCEEDS is now available on a web <http://www.oce.kagoshima-u.ac.jp/users/kaigan/sediment/Ephotoce/index.html>. This paper will mainly introduce contents of the PHOTOCEEDS.

2. Features of the PHOTOCEEDS

Table 1. example of the photographic names and sizes

Photo. Name	Size
Breaching(Fuki).jpg	627KB
Breaching&Fence.jpg	601KB
Overwash.jpg	484KB
Cusp&erosion.jpg	497KB
CuspDamage1.jpg	509KB
CuspDamage2.jpg	567KB
BankerErosion.jpg	269KB
PocketBeach.jpg	350KB
Oshikiri1992.jpg	478KB
OshikiriErosion.jpg	589KB
VegetationNagasaki.jpg	686KB
CliffErosion1.jpg	705KB

The current web English version contains more than 1,000 coastal engineering photographs. The Photographs are originally scanned and digital processed. An average resolution is 300DPI. However, some of the photographs have more low resolution.

3. Contents of the PHOTOCEEDS

Table 2 shows the main folder names of the PHOTOCEEDS. Each folder contains sub-folders.

Table 2. Contents of the Photoceeds.

COdamage	Coastal damage
Currents	Nearshore currents
Environments	Coastal environment
Extra	Extra topics
Measurements	Field and lab. measurements
Morphology	Coastal geomorphology
Protection	Coastal protection
Rivermouth	River mouths
Sanlife	Life of a sediment
Sedtrans	Sediment transport
Sign	Sign for caution, use, and etc.
Utility	Coast use
Waves	Waves on a shore

Table 3. Subfolders list of morphology

3Dmorph	Three dimensional geomorphology
Bar	Longshore bar
Beach	Sandy beach
Beachrock	Beach rock in tropical area
Berm	Berm
Cliff	Coastal cliff and bluff
Coralreef	Coral reef
Cusps	Beach cusps
Dune	Coastal dune
Erosion	Coastal erosion
Extra	Extra folder
Island	Island
Ripples	Sand ripples
Scarp	Dune and beach scarps
Shingle	Shingle beach
Spit	Spit
Tidalflat	Tidal flat
Tombo	Tombo
Wetland	Coastal wetland

4. Photographic example of each folder.

Several selected photographs in the PHOTOCEEDS are shown to have general image of the contents. So far, the explanation of each individual photograph is not given in the database, yet. Thus, the user can get some information implicitly by seeing the name of folders and subfolders where the photographs are deployed, or can get an explanation by the teachers and instructors.



Photo.1 Tombolo at Karahama beach



Photo. 5 Rip current and crescentic longshore bar



Photo. 2 Sand ripples at Motte beach



Photo. 6 Loggerhead turtle at Inakahama beach



Photo. 3 Longshore sediment transport around a groin



Photo. 7 River discharge at Hitotsuba Coast



Photo. 4 Breaking of swell waves at Sibushicoast

5. Conclusion: The main conclusions are as follows;

- 1). the PHOTOCCEEDS contains a reasonable amount of coastal engineering topics and is still expanding the contents.
- 2). the database is easy to apply for any documents
- 3). the photographs are free to use, even though a copyright is kept by the author and contributors.

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