



3rd ICTG 2016

04-07 September 2016, Guimarães, Portugal



University of Minho
School of Engineering



Trend of Research for Transportation Geotechnics in Japan (TC202 Japanese Local Task Force Committee Activity)

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Terms of Reference for TC202

【TC202】

Technical Committee 202 (formerly TC-3) of the ISSMGE

【Goal】

To apply broad engineering to bridge the gap between Pavement/Railway Engineering and Geotechnical Engineering.

【Main task】

To promote co-operation and exchange of information and knowledge about the geotechnical aspects in design, construction, maintenance, monitoring and upgrading of roads, railways and airfields.

【Main members (2013~)】

TC Chair : Prof. Erol Tutumluer (USA)

TC Secretary : Prof. Tatsuya Ishikawa (Japan)

etc.



Research Interest

- Geotechnics for pavement, rail track and airfield
 - Geomaterial, including nontraditional materials
 - Asphalt mixtures and hydraulically-bound materials
 - Earthworks for transportation facilities
 - Application of geosynthetics
 - Laboratory testing and in-situ testing
 - Modeling and numerical simulations
- etc.





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Papers survey

Survey research items and the number of survey papers

Subject	The Number	
	Special Document	Keyword
1 Study for the standardization of the materials properties test method of roadbed and roadbed materials	47	169
2 Evaluation method of soundness and seismic performance for structure of transportation and ground	112	431
3 Preparation of the structure analysis technique to establish the performance based design of the traffic ground structure	43	147

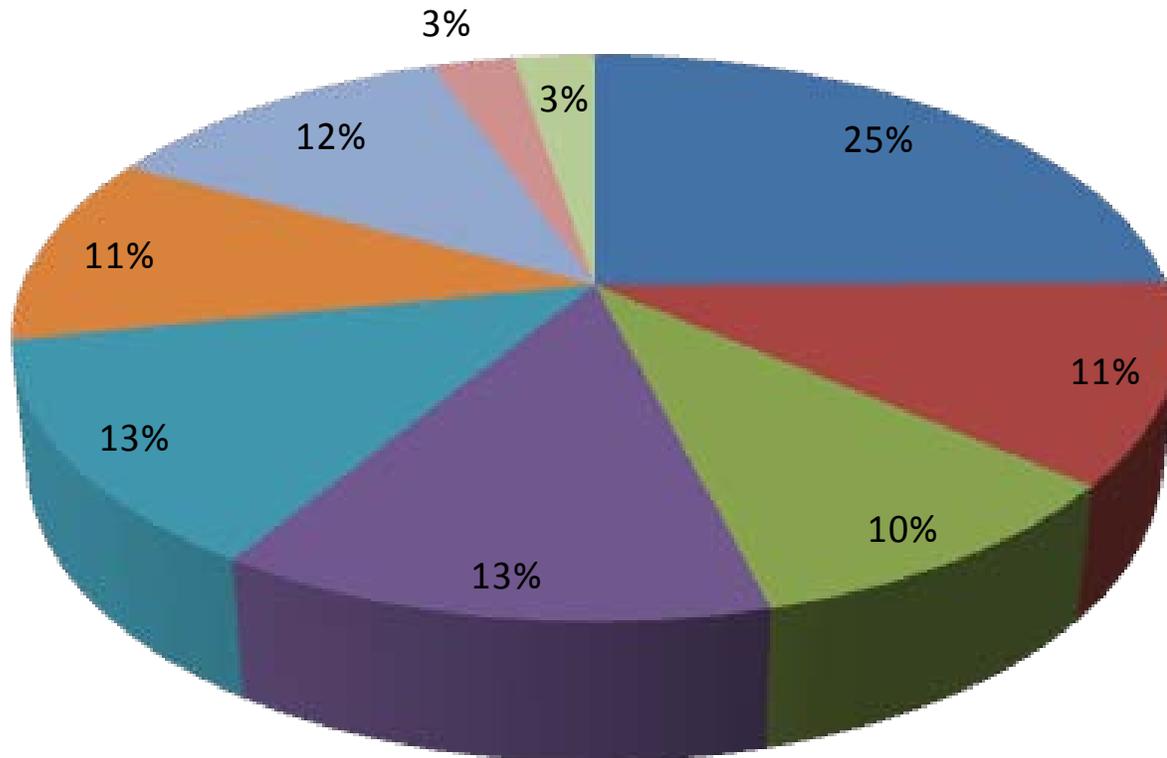
Survey research items and number of survey documents

Title	Year	Total number
Japan National Conference on Geotechnical Engineering	2011-2015	5552
ANNUAL CONFERENCE OF THE JAPAN SOCIETY OF CIVIL ENGINEERS	2011-2015	15666
Journal of Japan Society of Civil Engineers, Ser. C (Geosphere Engineering)	2011-2015	190
Journal of Japan Society of Civil Engineers, Ser. A2 (Applied Mechanics (AM))	2011-2015	452
Journal of Japan Society of Civil Engineers, Ser. E1 (Pavement Engineering)	2011-2015	128
Another Japan Domestic National Conference	-	573
Total		22561



Classification Summary

【Subject1】 Studies regarding the standardization of the material property test methods for subgrade and roadbed materials

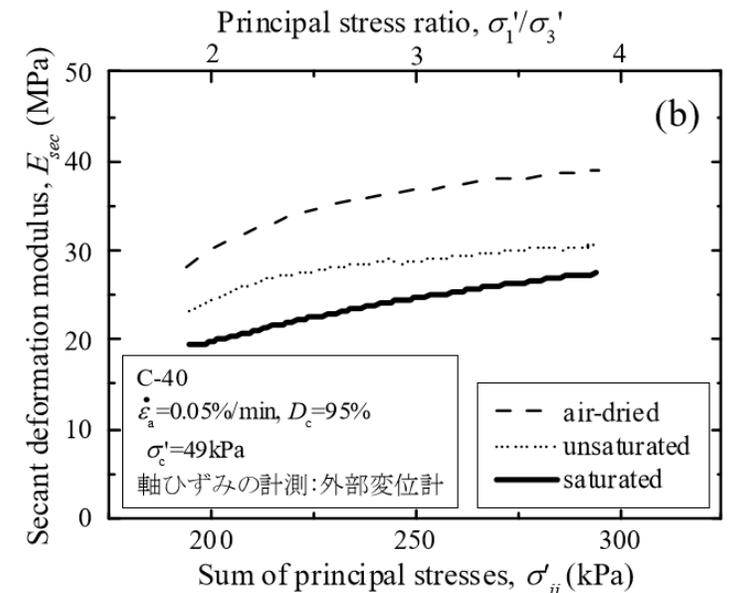
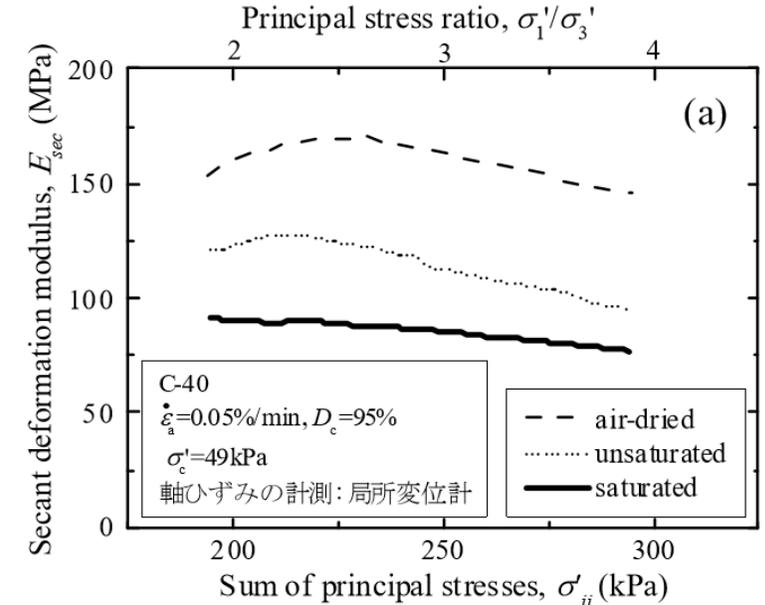
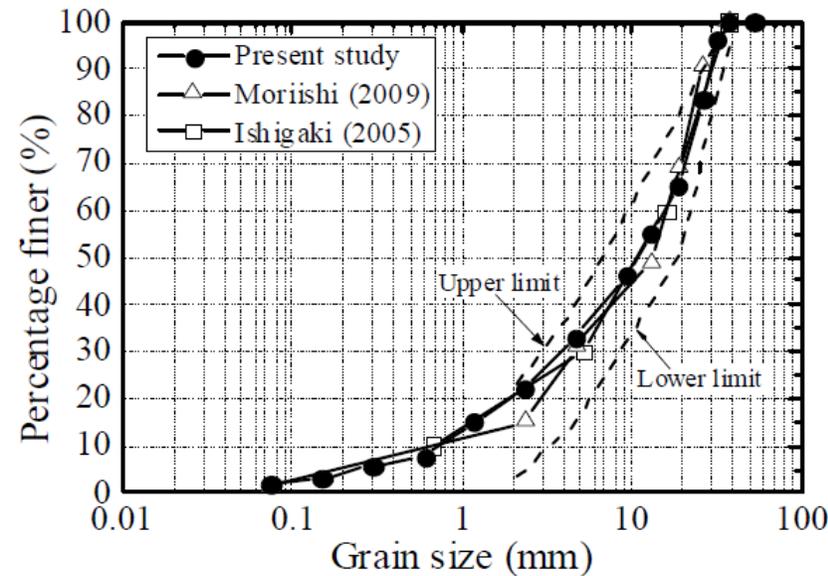
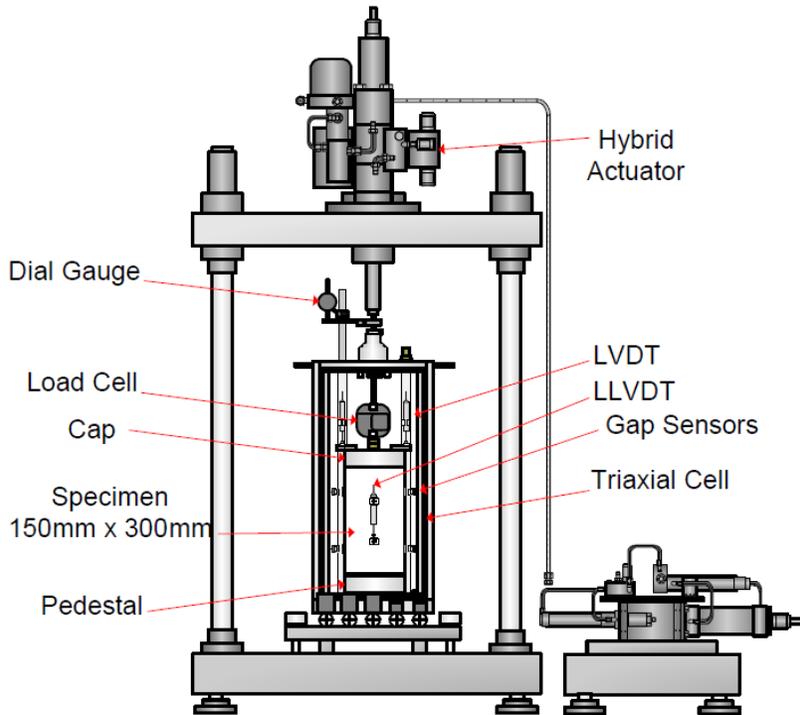


1. Structure/ Material
2. Test types/ Test apparatus
3. Physical characteristic
4. Characteristics of strength and deformation
5. Seepage characteristic
6. Thermal characteristic
7. Modeling/ Analysis
8. Design/ Evaluation
9. Etc



【Major research paper①】

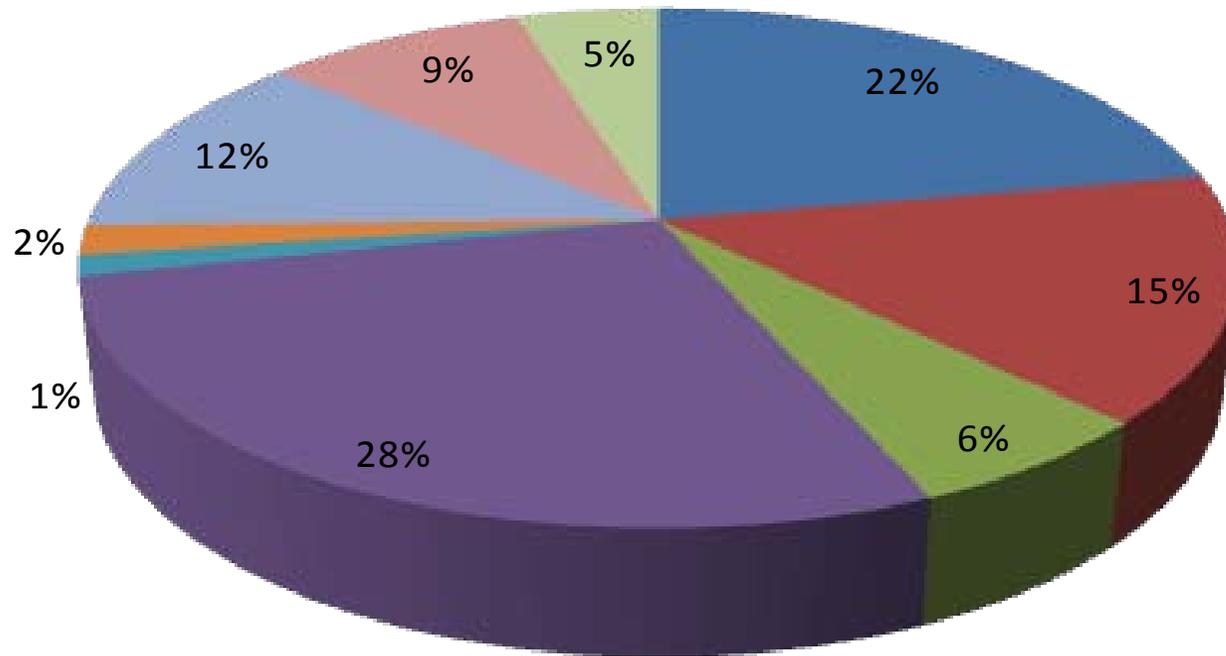
Application of Triaxial Apparatus for Unsaturated Soils to Mechanical Behavior of Granular Base Course Material.





Classification Summary

【Subject2】 Evaluation method of soundness and seismic performance for transportation earth structure



1. Structure/ Material
2. Test types/ Test apparatus
3. Physical characteristic
4. Characteristics of strength and deformation
5. Seepage characteristic
6. Thermal characteristic
7. Modeling/ Analysis
8. Design/ Evaluation
9. Etc

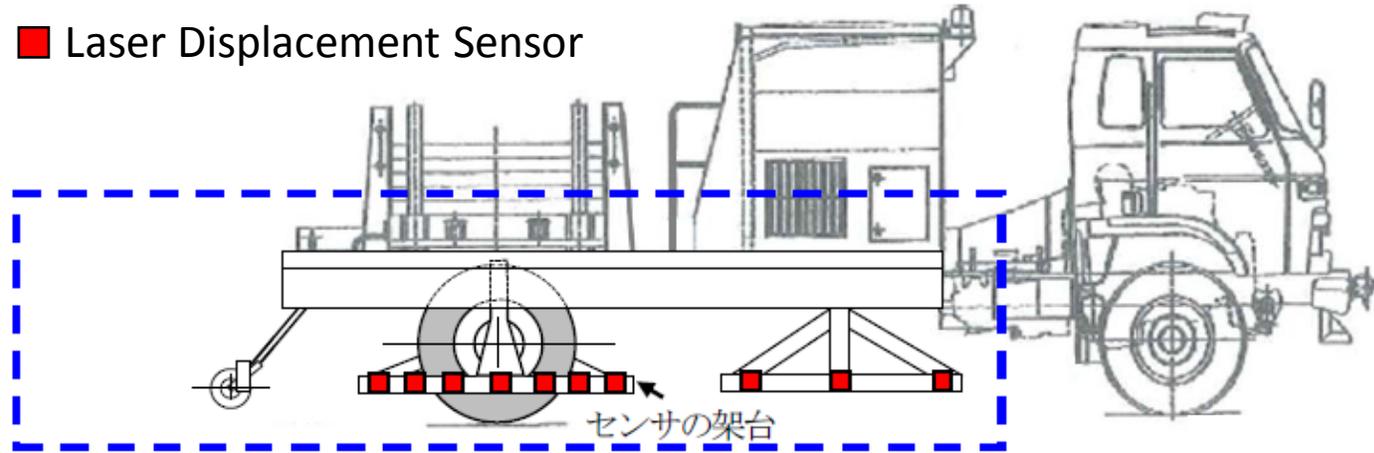


【Major research paper②】 A Study on evaluation of Pavement Soundness Using Mobil Deflection Measuring Device

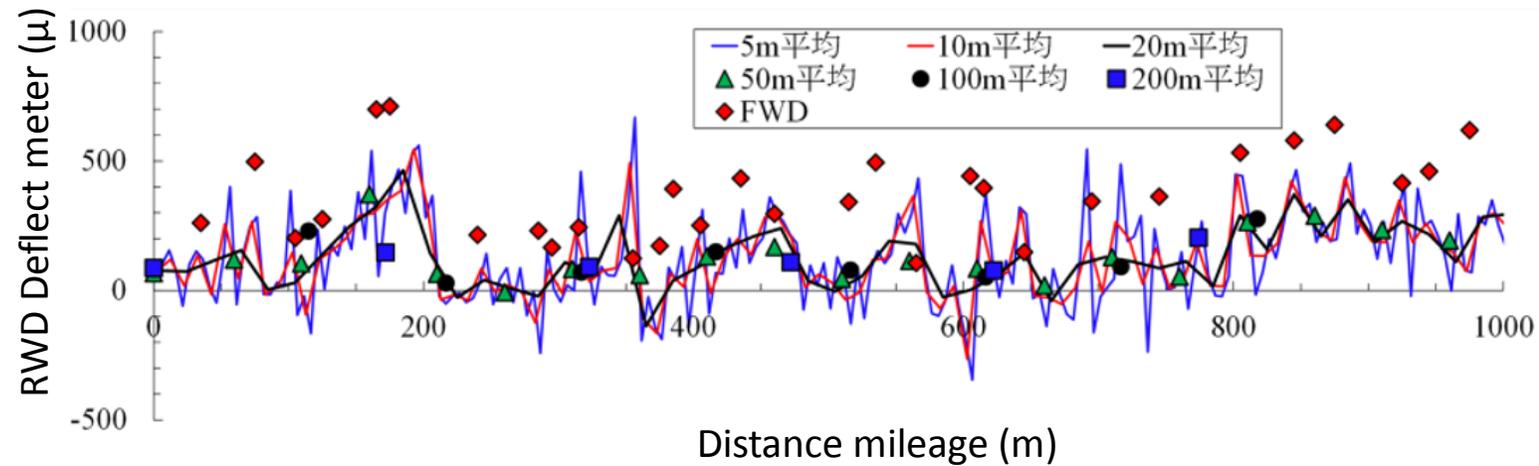
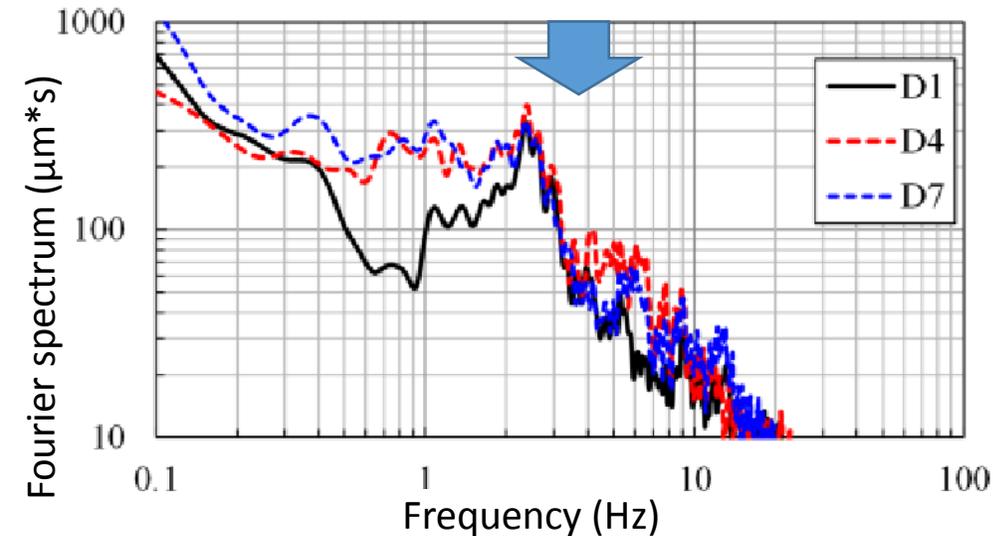


Laser Displacement Sensor

■ Laser Displacement Sensor



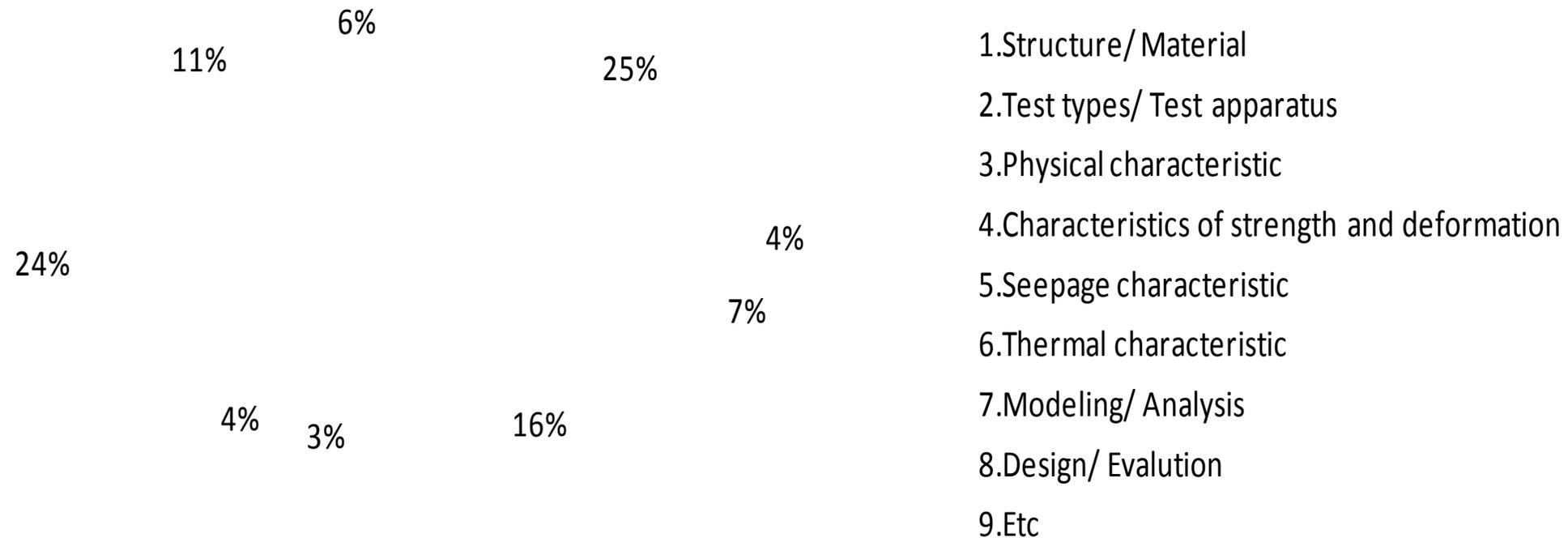
Rolling Weight Deflectometer (RWD)





Classification Summary

【Subject3】 Structure analysis methods to establish the performance based design method for transportation earth structures





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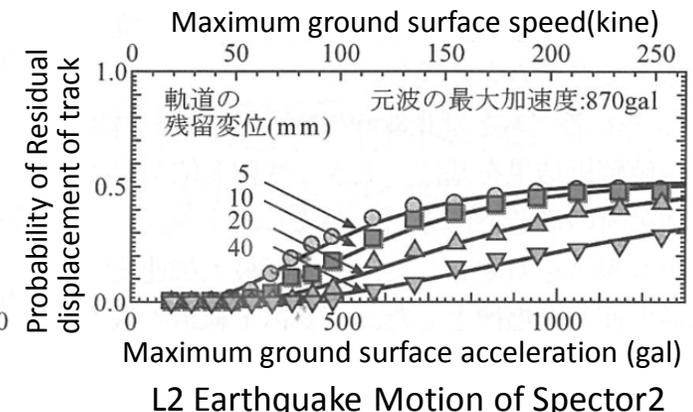
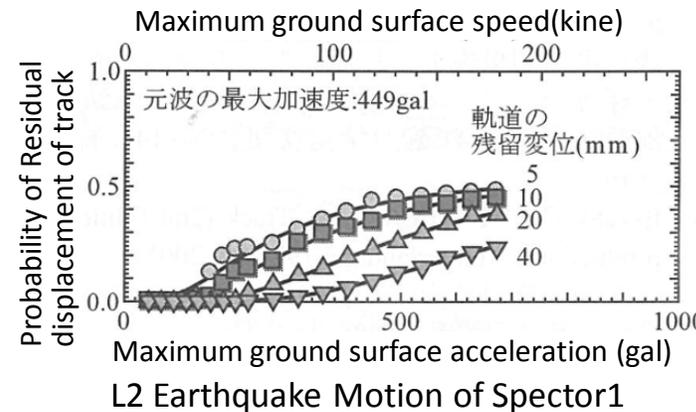
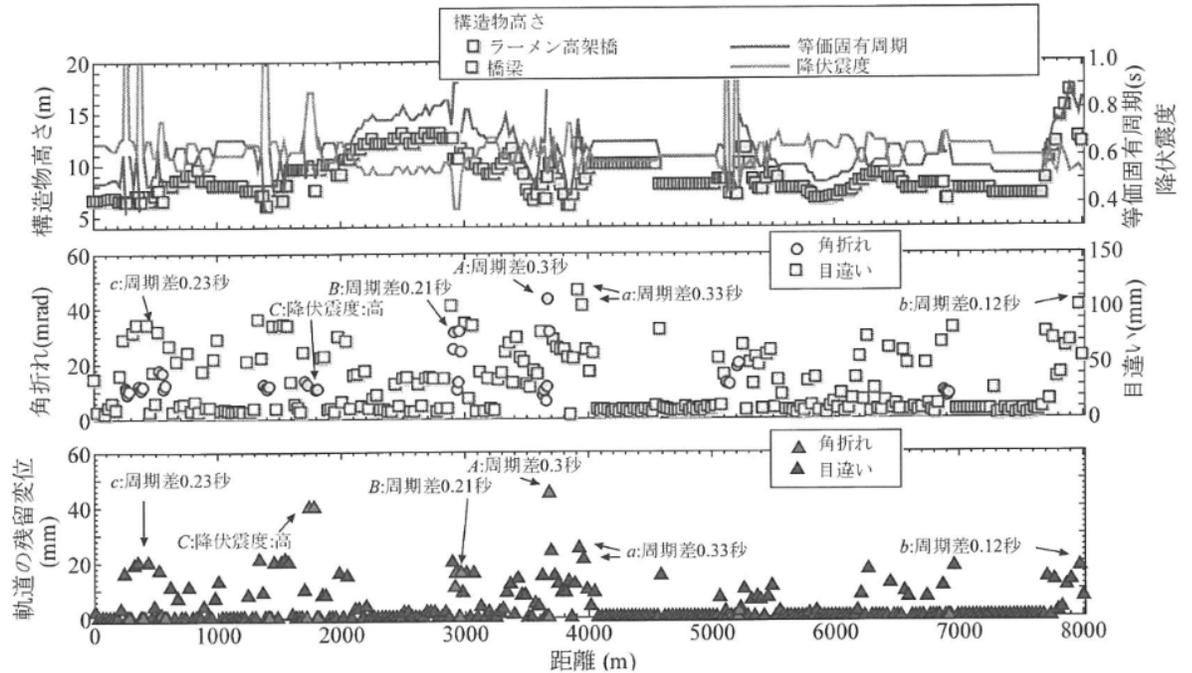
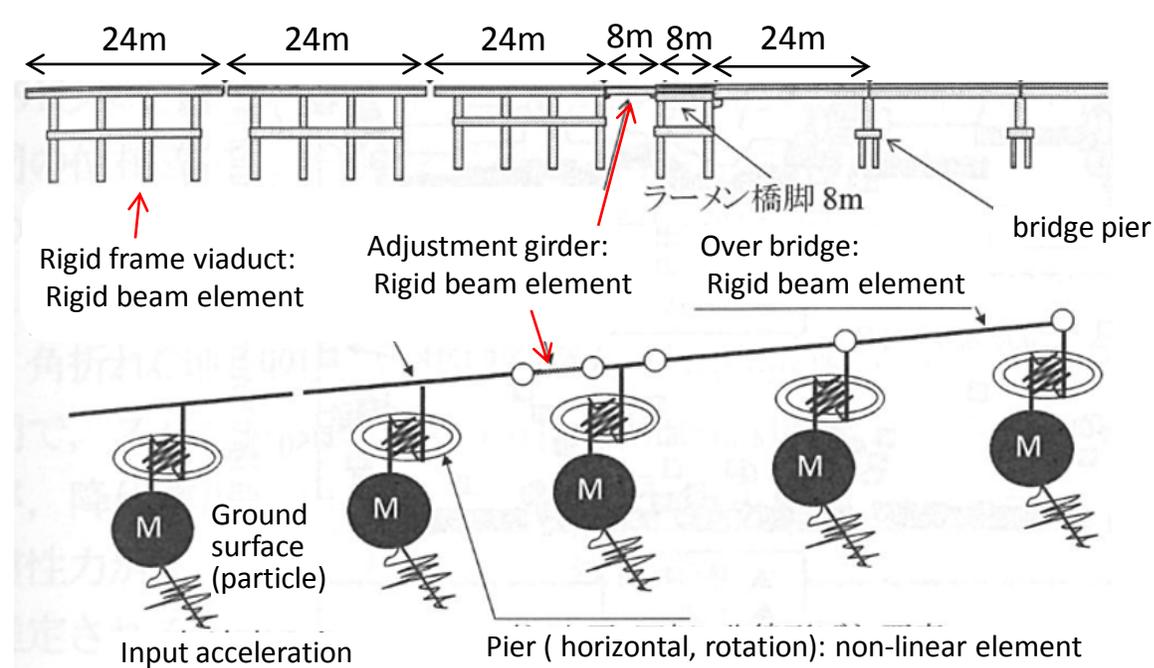
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【Major research paper】 Residual Deformation of Ballasted Track laid on The Structure Boundary Area After an earthquake





Conclusions

- We surveyed the Japanese latest study trend for Transportation Geotechnics based on the papers relating the scientific research subjects of TC202 Japanese Task Force Committee.
- Moreover, we have systematized each keyword and analyzed it to survey the study contents of the papers relating to the respective subjects.
- We will arrange keywords for every classification of each subject and analyze the latest study trend for transportation geotechnics engineering in detail and will create an environment to send the relative information to all the civil engineers concerned.



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Thank you very much
for your kind attention