

吴兴征老师指导的 2014 级土木工程毕业设计列表（2018 年）

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1	渠道边坡稳定性分析	20144152123	吴英杰	
<p data-bbox="300 324 1361 929">           岩土体的边坡稳定性研究一直以来都是各项工程建设中的均需考虑到的重要问题，属于土力学中的稳定问题。其安全性的影响因素相当多，相关的理论研究也是十分丰富。在确定性分析中，其安全性评价由安全系数确定，但对环境因素考虑的不同，即假设条件不同，其安全系数的计算结果也不同。本论文使用文献 <i>Stream Bank Stability in Eastern Nebraska</i> 中提供的土体参数数据（取 5 个溪流 101 组样本值组成），每个数据集均由多个样本点的土体观测值，采用两种模型分析岸坡稳定性：即 Culmann 法和 Bishop 条分法。其中 Culmann 法为平面失效，Bishop 法为圆弧滑动面失效。通过两种方法对环境条件的考虑和假设的不同，研究极限平衡理论下上述两种方法的优缺点。并以五个溪流的数据构成的典型岸坡进一步分析安全系数与强度参数的关系。其中，文中的数据处理、模型图形绘制、安全系数的计算由 R 语言平台和边坡稳定分析软件 Rocscience Slide.v5.014 平台完成。本文的讨论有助于对特定条件下极限平衡法的选定和强度参数对安全系数影响的研究。         </p> <p data-bbox="300 947 1214 981"> <b>关键字：</b> 边坡稳定性； 极限平衡法； 安全系数； 平面失效； 圆弧滑动失效；         </p> <p data-bbox="300 1001 1361 1966">           The study of the slope stability about rock and soil has always been an important issue that needs to be considered in the construction of various projects, and it belongs to the stability problem in soil mechanics. There are many factors affecting its safety, and the relevant theoretical research is also very rich. In the deterministic analysis, the safety evaluation is determined by the safety factor, but the calculation results of the safety factor are also different for different environmental considerations, ie different assumptions. This paper uses the soil parameter data provided in <i>the Stream Bank Stability in Eastern Nebraska source data</i> (composed of 101 groups of sample values from 5 river basins). Each dataset is measured by soil observations from multiple sample sites. Two models are used. Analysis of bank slope stability: Culmann method and Bishop method. The Culmann method is plane failure, and the Bishop method is rotation failure. The advantages and disadvantages of the above methods under the limit equilibrium theory are studied through the differences in the considerations and assumptions of the two environmental conditions. A typical bank slope composed of data from five river basins was used to further analyze the relationship between safety factors and strength parameters. Among them, the data processing, model graphics rendering, and calculation of safety factor in the text are completed by the R platform and the Slope stability analysis software Roccio Slide.v5.014 platform. The discussion in this paper is helpful to the study of the selection of the limit equilibrium method and the influence of the strength parameters on the safety factor under different specific conditions.         </p>				

	<b>Key words:</b> slope stability; limit equilibrium method; safety factor; plane failure; rotation failure;		
2	土力学中部分公式图表的 R 语言实施	20144152071	陈旭
	<p>土力学是土木工程当中较为重要的一门力学学科，在日常的生产活动当中有广泛的应用，例如对土体承载力的计算，边坡稳定性的分析，土体的渗透系数等方面。但其中有些部分计算起来较为复杂，且计算得到的结果无法直观的表现出来。因此将其与计算机技术结合起来，本文将通过借助 R 语言这一新型计算机语言，通过具体实例将 R 语言在土力学中的应用展示出来。通过程序的编写，可将较为复杂的实际工程问题准确直观的表现出来，既节省了时间，结果又较为精确。本文采用了三个例子一是确定极限平衡区的轨迹，二是计算确定地基的各项荷载值。三是在直剪试验中确定土体的粘聚力和内摩擦角。对 R 语言在土力学中的应用有一个直观地显示。</p> <p><b>关键词：</b> 土力学 R 语言实施极限平衡区地基承载值直剪试验</p> <p>Soil mechanics is the more important a mechanics discipline of civil engineering, in the daily production activities of a wide range of applications, such as the calculation of the bearing capacity of soil slope stability analysis, the permeability coefficient of soil, etc.However, some of them are more complicated to calculate and the results obtained cannot be intuitively expressed.Therefore, combining it with computer technology, this paper will show the application of R language in soil mechanics by means of the new computer language of R language.Through the programming of the program, the more complex practical engineering problems can be presented accurately and intuitively, saving time and accuracy.In this paper, three examples are used to determine the trajectory of the limit equilibrium region, and the second is to calculate the load value of the foundation.The cohesion and internal friction Angle of soil are determined in triaxial test.The application of R language in soil mechanics is presented visually.</p> <p><b>Key words:</b> soil mechanics; R language implementation; limit equilibrium zone; foundation bearing value. Triaxial test</p>		
3	特定场地下灌注桩安全系数与双曲线回归参数的相关关系	20144152074	董存言
	<p>灌注桩是先开挖直径合适桩孔，然后开始在钻孔中下方钢筋笼，最后就是要灌注混凝土。由于其没有振动与挤土等优点，所以它更适用于建筑物较高以及建筑较为密集的地区，也因此在国内建筑与施工等方向得到了十分广泛的使用。灌注桩的承载能力极限状态、正常使用极限状态是研究灌注桩的承载能力的两大重要指标，这两大</p>		

	<p>指标对于研究灌注桩的正常使用以及破坏具有重要的意义。然而除了桩自身的差异外，灌注桩所处的工程地质状况，荷载的大小、加载的方式等外界条件对桩的承载能力有着特别重要的影响。本文对廊坊、通州、回龙观、顺义等四个地区地灌注桩地基静态轴向压缩荷载下现场荷载数据进行收集，使用 R 语言，通过最小二乘法参数的控制来得到双曲线的两个回归参数，根据已查阅到的文献分别建立正常使用极限状态下与承载能力极限状态下安全系数的表达式，并对回归参数值、施加荷载大小对安全系数的影响进行了参数敏感性分析，这些探讨为该地区的灌注桩的设计提供相应的参考。</p> <p><b>关键字：</b>灌注桩；双曲线回归分析；荷载-沉降；安全系数；R 语言</p> <p>The cast-in-place pile is first excavated with a suitable diameter of the pile hole, and then drilled in the middle and lower reinforcement cage to inject concrete. Because it has no vibration and no squeezing soil, it is suitable for areas with high buildings and dense buildings, and has been widely used in construction construction at home and abroad. The limit state of the bearing capacity of the cast-in-place pile and the normal use limit state are two important indexes to study the bearing capacity of the cast-in-place pile. It is of great significance for the study of the normal use and damage of the pile. However, in addition to the differences in the pile itself, the engineering geological conditions of the cast-in-place pile, the loading method, and the size of the load have an important influence on the bearing capacity of the pile. In this paper, for the field load data sets under static axial compressive loading of cast-in-place pile foundation in Langfang, Tongzhou, Huilongguan and Shunyi, the two parameters <math>h_1</math> and <math>h_2</math> of hyperbola are obtained by the least squares parameter control using R language. The correlation of these two parameter pairs is discussed. According to the existing literature, the expressions of the safety factor under the limit state and the normal service limit state of the bearing capacity are respectively established, and the parameters of the regression parameters and the influence of the applied load magnitude on the safety factor are parameterized. Sensitivity analysis. These discussions provide relevant reference for the design of the piles in the area.</p> <p><b>Key words:</b> cast-in-place pile; hyperbolic regression analysis; load-settlement; safety factor; R language</p>				
4	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;">土体强度相关的岩土工程稳定性评估</td> <td style="width: 20%; padding: 5px;">20144152137</td> <td style="width: 20%; padding: 5px;">姜鹏</td> <td style="width: 10%;"></td> </tr> </table>	土体强度相关的岩土工程稳定性评估	20144152137	姜鹏	
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	<p>在建筑施工过程中，基础的原有应力状态由于荷载而发生变化，导致基础变形，基础沉降，基础剪切破坏，基础失稳。因此，有必要讨论岩土工程中与土体强度特性有关的安全评估问题。主要采用技术规范中推荐的安全系数法，考虑了部分系数值不</p>				

	<p>同时土体的粘聚力和摩擦角对安全系数的影响。将考虑无限边坡，地基承载力，重力挡土墙等的稳定性评估。</p> <p><b>关键字：</b>无限边坡；挡土墙；地基承载力；安全系数；稳定性</p> <p>During the construction process of the building, the original stress state in the foundation changes due to the load, causing foundation deformation, foundation settlement, shear failure of the foundation, and instability of the foundation. Therefore, it is necessary to discuss the safety assessment issues related to soil strength characteristics in geotechnical engineering. The safety factor method recommended in the technical specification is mainly adopted, and the influence of the cohesion force and the friction angle of the soil on the safety factor when the value of the partial coefficient is different is taken into consideration. The stability evaluation of an infinite slope, foundation bearing capacity, gravity retaining wall, etc. will be considered. The study of this paper will begin by selecting a typical calculation example.</p> <p><b>Key words:</b> infinite slope; retaining wall; foundation bearing capacity; safety factor; stability</p>			
5	<p>桩基加载曲线的统计分析</p>	20144152125	孙国雪	
	<p>基桩的竖向静载试验一直作为确定结构物设计承载力的可靠手段之一。由于受地质状况和土体空间变异性的影响，基桩在不同地质环境条件下的荷载-位移曲线情况的差异性很大，即使地质环境相似但土体不同也会存在较大的差异。因此荷载-位移模型的分析对预测基桩的变化有非常重要的意义。本文结合京冀地区对钻孔灌注桩的 4 个场地检测数据集（由 4 个场地的 101 个样本组成），采用国际上常用的两参数双曲线模型拟合每一条荷载-沉降曲线。为降低因荷载量级不同引起的曲线离散性，又采用标准化函数模型进行拟合，进而比较标准化处理对曲线离散性的影响程度。此外，对不同场地的回归参数的最优边缘分布模型进行了检验。该研究有助于掌握基桩的荷载-沉降双曲线的变化趋势，并为该地区的基桩的设计提供参考。</p> <p><b>关键词：</b>钻孔灌注桩；标准化模型；荷载沉降；相关系数；边缘分布</p> <p>The vertical static load test of piles has always been used as one of the reliable means to determine the structural design bearing capacity. Due to the influence of stratum conditions and spatial variability of soil, the load-displacement curves of foundation piles under different geological environment conditions are very different. Even if the geological environment is similar, the soils will have different differences. Therefore, the analysis of the load-displacement model is very important for predicting the change of piles. In this paper, we combine the four site detection datasets of bored piles in Beijing-Gyuri (composed of 101 samples from 4 sites) and use the two-parameter hyperbolic model commonly used in the world to fit each load-settlement curve. In order to reduce the dispersion of curves caused by</p>			

	<p>different load levels, a standardized function model was used to fit, and then the degree of influence of the normalized treatment on the dispersion of the curves was compared. In addition, the optimal edge distribution model of regression parameters for different sites was tested. This study helps to understand the trend of load-settlement hyperbola of foundation piles and provides reference for the design of foundation piles in the region.</p> <p><b>Key words:</b> Bored piles; standardized model; load settlement; correlation coefficient; edge distribution</p>			
6	<p>钻孔灌注桩加载曲线的统计分析</p>	<p>20144152017</p>	<p>逯学泽</p>	
	<p>CFG 桩(cement-fly ash-gravel pile)是一种非常重要的地基处理形式之一，在日益增加的大面积住宅和商业开发中的作用变得越来越突出，然而该种桩型的加卸荷-位移变形特性仍然需深入去研究。根据北京地区 CFG 桩和复合地基(PSI)系统静态轴压加载下的 12 个全尺寸加卸载试(包括 6 个场地的 463 个样本)测试成果。采用两参数的双曲线(hyperbolic)或幂函数(power law)模型回归拟合各个场地的多条荷载-沉降变形曲线。拟合得到的回归参数表现出了较大的离散。</p> <p>将单个场地的多组回归参数组成一个随机向量，可由简单的两变量随机向量来体现其加载-位移曲线的不确定性。利用 R 语言对数据进行双曲线回归拟合，从而获取到最优荷载-沉降曲线回归参数边缘分布模型。并对归一化前后回归参数的相关系数进行讨论。</p> <p><b>关键字:</b> 荷载-沉降; CFG 桩单桩, PSI, 幂函数, 双曲线, 归一化</p> <p>CFG piles (cement-fly ash-gravel piles) are one of the most important forms of foundation treatment and have become increasingly prominent in the increasingly large-scale residential and commercial development. However, such pile-type ash-gravel piles The unloading-displacement deformation characteristics still need further study. Based on the static axial load of CFG piles and composite foundation (PSI) systems in Beijing, 12 full-scale loading and unloading tests (including 463 samples from 6 sites) were performed. Two-parameter hyperbolic or power law model regression was used to fit multiple load-settlement deformation curves at each site. The regression parameters obtained by fitting show a large dispersion.</p> <p>The multiple sets of regression parameters of a single site form a random vector, and the uncertainty of the load-displacement curve can be represented by a simple two-variable random vector. The data was subjected to hyperbolic regression fitting using R language, and the edge distribution model of the optimal load-settlement curve regression parameters was obtained. The correlation coefficients of regression parameters before and after normalization are discussed.</p>			

	<b>Key words:</b> load-settlement, CFG piles, PSI, power function, hyperbola, normalization		
7	CFG 桩复合地基的极限承载力分析	20144152068	赵克川
	<p>在当代建筑工程基础处理中，针对不同地质环境的处理方法有多种。其中多用于高层和超高层建筑的 CFG 桩复合地基是重要的地基处理形式之一。为保证桩间土参与工作，该复合地基通过褥垫层与基础连接。在荷载作用下桩顶应力大于桩间土表面应力，使桩承受的荷载可向深层土中传递，使复合地基承载力增加，变形减小。此外 CFG 桩复合地基具有适用性广，承载力提高幅度大；施工简便，工程造价低；以及保护环境等一系列优点。因此在研究和施工中 CFG 桩复合地基的安全性分析尤为重要。本文选取 Q-S 曲线拟合参数为研究对象。在所用工作以 R 语言工具的前提下，对两种参数之间的关系进行了分析，并讨论了该参数对安全系数的影响。在研究过程中本文依据北京地区（不同地质条件下）针对 CFG 单桩静载试验所获得的大量统计数据，完成双曲线拟合。再通过单桩竖向承载力的计算，确定复合地基承载力安全系数。通过讨论不同变量对数据结果的影响，完成 Q-S 曲线拟合参数与承载力安全系数之间的关系分析等，进而构建 CFG 桩复合地基的极限承载力分析模型。</p> <p><b>关键字：</b> CFG 桩复合地基；极限承载力；安全系数；双曲线拟合</p> <p>In the basic treatment of contemporary construction projects, there are many ways to deal with different geological environments. The CFG pile composite foundation, which is mostly used in high-rise and high-rise buildings, is one of the important forms of foundation treatment. In order to ensure that the soil between the piles participates in the work, the composite foundation is connected to the foundation through a cushion. Under the action of loads, the stress at the top of the pile is greater than the surface stress between the piles, so that the load the pile can bear can be transferred into the deep soil, so that the bearing capacity of the composite foundation increases and the deformation decreases. In addition, CFG pile composite foundation has a wide range of applicability, bearing capacity increase range; construction is simple, low construction cost; and a series of advantages of environmental protection. Therefore, the safety analysis of CFG pile composite foundation is particularly important in the research and construction. This article selects Q-S curve fitting parameters as the research object. Under the premise of using R language tools, the relationship between the two parameters was analyzed, and the influence of this parameter on the safety factor was discussed. In the course of the study, this paper has completed hyperbolic fitting based on the large amount of statistical data obtained from the CFG single pile static load test in the Beijing area (under different geological conditions). Then calculate the vertical bearing capacity of a single pile to determine the safety factor of the bearing capacity of the composite foundation. By discussing the influence of different variables on</p>		

	<p>the data results, the relationship between the Q-S curve fitting parameters and the safety factor of bearing capacity is analyzed, and then the ultimate bearing capacity analysis model of CFG pile composite foundation is constructed.</p> <p><b>Key words:</b> CFG pile composite foundation; ultimate bearing capacity; safety factor; hyperbolic fitting</p>			
8	广州市白云区停车场办公楼桩基础设计	20144152096	张家玮	
	<p>基础桩与桩承台共同地组成了桩基础，桩基础建筑物往往使用低承台桩基础，高铁工程、高层建筑、桥梁工程中大量使用。这里结合广州市白云区地铁停车场附属办公楼的桩基础进行设计，办公楼高 4 层，热带气候海积平原，地形平坦，施工现场土层表层以耕植土层为主要土层，施工场地的土质稳定性良好。此次设计参照《建筑桩基技术规范》(JGJ 94-2008)，请广州市地质勘探单位勘探并制作了施工场地地质勘探报告，根据勘探报告选择了桩形、选择了持力层、确定承台埋深、计算单根基桩承载力、布置基桩位置、验算承载力、设计桩承台结构以及设计桩身、并估算了工程量和工程造价。</p> <p><b>关键字:</b> 桩基础设计；承载力验算；桩承台配置钢筋</p> <p>The foundation pile and the pile cap jointly constitute the pile foundation. The pile foundation foundation often uses the low cap pile foundation and is widely used in high-speed rail projects, high-rise buildings and bridge projects. It is designed in combination with the pile foundation of the office building attached to the Baiyun District Subway Parking Lot in Guangzhou City. The office building is 4 storeys high. It has a tropical climate and sea plains. The terrain is flat. The surface layer of the construction site is mainly cultivated soil layer, and the construction site The earth's stability is good. The design referred to the "Technical Specification for Construction Pile Foundations" The geological exploration company in Guangzhou was asked to prospect and produce a geological survey report for the construction site. According to the exploration report, the pile shape was selected, the bearing layer was selected, and the bearing was determined. The burial depth of the platform, the calculation of the bearing capacity of a single pile, the placement of the pile, the calculation of the bearing capacity, the design of the pile cap structure and the design of the pile, and the estimation of the project volume and project cost.</p> <p><b>Key words:</b> Pile foundation design; calculation of bearing capacity; pile caps with rebar</p>			
9	锚杆抗拔承载力计算及影响因素探究	20144239080	曹亚阔	

	<p>近些年锚杆在施工工程中得到了广泛地使用，在现行的规范下，锚杆的种类很多，怎样针对不同的地质条件、施工方法选择合适的锚杆进行施工，怎样更好地保障工程的安全性被越来越多的人关注。在现行的锚杆抗拔安全设计标准中，将锚杆的抗拔安全系数定义为单根锚杆的抗拉强度、注浆体与锚杆杆体的粘结强度及注浆体与所在周围土体的粘结强度三种情况，但在实际中由于受力机理、材料性质等方面存在差异，以上三种情况的安全系数是完全不同的。在这一背景下，本文以这三种情况的锚杆抗拔安全系数为中心，先对锚杆的种类进行大体归纳，对锚杆的抗拔安全系数进行取值分析，结合实际的工程案例来探讨算例的合理性。给出的安全系数计算方法可为相关工程施工提供理论和数据上的支持。该研究有助于了解锚杆抗拔安全系数的影响因素，并为锚杆的设计提供参考。</p> <p><b>关键字：</b>锚杆；抗拔安全系数；粘结强度</p> <p>In recent years, the bolts have been widely used in the project. Under the current specifications, there are many types of bolts. How to select suitable anchor rods for different geological conditions and construction methods to ensure the safety of the project is exceeded More and more people are concerned that in the current safety standards for anchor pullout, the pullout safety factor of the anchor is defined as the tensile strength of a single anchor, the bond strength between the grouting body and the anchor rod, and the note. There are three cases of bond strength between the slurry and the soil around it. However, in practice, due to differences in the stress mechanism, material properties, etc., the values of the safety factors in the above three cases are completely different. In this context, this paper takes the safety factor of the bolts in the three situations as the center, first generalizes the types of anchor rods, analyzes the value of the anti-pull safety factor of the anchor rods, and combines practical engineering cases. To verify the validity of the example. The calculated safety factor values provide theoretical and data support for the relevant project construction. This thesis analyzes the data by R language. This study helps to understand the changing trend of the safety factor of the anti-pulling bolt and provides a reference for the design of the bolt.</p> <p><b>Key words:</b> anchor; anti-pull safety factor; bond strength</p>			
10	水库洪水调度计算	20144239078	赵文轩	
	<p>水库洪水调度是根据在河道上建立的诸多水库所承担的水利水电任务原则，运用水库自身的调蓄洪水能力对入库洪水水量大小的调节从而保障大坝下游发电、防洪、灌溉等提高综合利用效益的一种开发控制运用水库技术。</p> <p>本论文主要研究分析内容是结合实际算例研究制定水库洪水预报方案，以便能更好提高水库的发电、防洪等方面的能力。研究在现有条件下水库的洪水调度，泄洪建筑物是否有闸门控制，对下泄流量过程线的形状的不同影响。在水库调蓄洪水的过程中，根据入库洪水流量大小的变化，找到规定相对应的防洪标准和水工建筑物的级别。采用列表试算法进行水库调节计算，根据洪水流量过程线变化过程推求相应的洪水下泄流量以及水库容量等条件的变化过程。通过制定水库可能的调度方案，确保既能起到良好防洪的前提下获取更好的发电效益。</p> <p><b>关键字：</b>洪水调度；防洪；下泄流量；试算法；水库调节</p> <p>Reservoir flood dispatching is based on the principle of water and hydropower tasks undertaken by many reservoirs established on river courses, and the use of the reservoir's own capacity for regulating flood storage to adjust the amount of flood water entering the</p>			

	<p>reservoir so as to ensure the integrated utilization of downstream dam power generation, flood control, irrigation, etc. A development of benefits controls the use of reservoir technology.</p> <p>The main research and analysis content of this paper is to study and formulate the reservoir flood forecasting plan in combination with actual calculation examples so as to better improve the capacity of the reservoir in terms of power generation and flood control. Study the flood control of the reservoir under existing conditions, whether the flood discharge structure has gate control, and have different effects on the shape of the discharge flow line. In the process of flood storage of reservoirs, according to the changes in the flow of flood water entering the reservoir, the corresponding flood control standards and levels of hydraulic structures are found. A list test algorithm is used to perform reservoir adjustment calculations. According to the change process of the flood flow process line, the corresponding flood discharge flow and reservoir capacity change conditions are inferred. By formulating possible reservoir dispatching schemes, we can ensure better power generation benefits under the premise of good flood control.</p> <p>Keywords: Flood dispatch; Flood protection; drainage flow; Trial algorithm; Reservoir Regulation</p>			
11	无限边坡的稳定性分析	20144239043	赵旭	
	<p>地质条件、坡度、边坡土体参数强度粘聚力和内摩擦角不同，边坡的安全系数也各不相同。在各种力的作用下，边坡工程中设计过大坡角的边坡与自然中不稳定的坡体，常发生破坏和滑动，坡体的大规模破坏会造成各种事故，给我们的生活带来不可估量的损失。因此在工程中我们需要边坡的稳定性分析,来保证边坡的稳定，防止土体剪切破坏，产生相对滑动,本文通过分析典型边坡实例来说明土体强度的各个参数对边坡稳定性的影响，将安全系数与土体参数强度粘聚力和内摩擦角之间的关系由图形表示，给出更直观的表达方式。</p> <p>关键词：无限边坡； 安全系数； 粘聚力； 内摩擦角；</p> <p>The strength cohesion and internal friction angles of the soil parameters, slope, and slope soil parameters are different, and the slope safety factors are also different. Under the influence of various forces, slopes with large slope angles and unstable slopes in nature are often destroyed and slide in slope engineering. Large-scale damage of slopes will cause various accidents. Life brings incalculable losses. Therefore, we need stability analysis of the slope in the project to ensure the stability of the slope, prevent the soil from shearing damage, and generate relative slip. This paper describes the typical example of the slope to illustrate the parameters of the soil strength to stabilize the slope. For the influence of sex, the relationship between the safety factor and the strength cohesion of the soil parameters and the internal friction angle is graphically represented, giving a more intuitive expression.</p> <p><b>Keywords:</b> Infinity slope; Safety factor; Cohesion; Internal friction angle</p>			

12	触探技术与砂性土的地基承载力分析	20144229190	宋东松	
	<p>地基承载力在土体的地基基础设计中是一个重要指标，有多种方法可以确定地基承载力的值，但由于土体在承载特性上具有空间变异性，因此相似的土层中土体的地基承载力将会有离散性，本文采用触探技术确定地基承载力能够较好的考虑土体的空间变异性。针对文献[3、5]中的场地砂土分布情况，采用圆锥贯入试验(CPT)和标准贯入试验(SPT)的测试结果，建立测试指标的曲线图以及同一地层深度下的概率密度曲线图，用于分析土体的地基承载特性。利用触探技术中的经验公式计算场地的地基承载力特征值，建立地基承载力安全系数和触探技术测量的试验指标的线性关系，为文献[3、5]中的砂性土地采用触探技术确定地基是否处于稳定状态提供了计算依据和参考。</p> <p><b>关键词：</b>地基承载力；空间变异性；圆锥贯入试验；标准贯入试验；安全系数</p> <p>The bearing capacity of the foundation is an important indicator in the foundation design of the soil. There are several methods to determine the value of the bearing capacity of the foundation, but due to the spatial variability of the bearing characteristics of the soil, the soil in the similar soil layer The foundation bearing capacity will be discrete. In this paper, the use of penetrating technology to determine the foundation bearing capacity can better consider the spatial variability of soil. For the distribution of sand in the site [3,5]. test results of Cone Penetration Test (CPT) and Static Penetration Test (SPT) were used to establish the curve of the test index and the probability density curve at the same depth The figure is used to analyze the ground bearing properties of soil. The eigenvalues of the ground bearing capacity of the site were calculated using the empirical formulas of the touch penetrating technology, and the linear relationship between the safety factor of the ground bearing capacity and the test index of the penetrating technology measurement was established, which was used for the sandy soil site in the literature [3,5]. The exploration technique determines whether the foundation is in a stable state and provides calculation basis and reference.</p> <p><b>Key words:</b> bearing capacity of subgrade; spatial variability; cone penetration test; static penetration test; safety factor</p>			
13	波高与周期的相关性	20144239112	吕柏芝	
	<p>海浪的波高与周期对海岸和海洋工程建筑物都具有强烈的影响，是工程设计中十分关注的重要因素，也是可以体现海浪状态最基本的参数，它们在理论及其应用研究中，波高和周期一般均视为随机变量。因为工程造价以及观测条件等方面有很多要求</p>			

	<p>限制，所以，研究波浪的波高和周期及其相关性，并总结、比较、选择出最优概率密度函数、确定最优边缘分布类型极其重要。本文主要通过对几种常用的边缘分布类型的对比，分析并选择出最佳分布类型，最后结合英国 Newlyn 和荷兰 Petten 两个案例，给出该海岸的波高、周期的统计均值与标准差。这些成果可为防洪海堤的设计提供数据支撑。</p> <p><b>关键词：</b>波高；波浪周期；波高与周期的相关性；最优边缘分布类型</p> <p>The wave height and cycle of waves have a strong influence on coastal and marine engineering buildings. They are an important factor in engineering design, and they are also the most basic parameters that can reflect the state of waves and are applied to all aspects of related research. Therefore, in major projects, wave height and cycle have always been two important factors that have attracted wide attention. In theory and its application studies, wave heights and periods are generally regarded as random variables. Because there are many requirements for engineering cost and observation conditions, it is very important to study the wave height, period, and correlation of waves and summarize, compare, select the optimal probability density function, and determine the optimal edge distribution type. This paper mainly analyzes and selects the best distribution type by comparing several commonly used edge distribution types. Combined with two cases of Newlyn in the United Kingdom and Petten in the Netherlands, the statistical mean and standard deviation of the wave height and period of the coast are given. These results can provide data support for the design of flood control seawalls.</p> <p><b>Key words:</b> wave height; wave period; correlation between wave height and period;and optimal edge distribution type</p>			
14	近海波候与海堤的稳定性	20144239019	杨奔	
	<p>本文分析了北美沿海地区和西北非洲近岸海域的实测波候资料。分析了两个区域长时间序列观测波高和周期的统计数据。利用皮尔森的相关系数和肯德尔的相关系数，分析了波高与周期的相关性。然后通过海堤越浪稳定性分析模型做出越浪安全性评估，分别绘制出海堤高度与安全系数的关系图和波高与安全系数的关系图。结果表明：随着海堤高度的增加，将使近海地区的越浪安全性增大；波高增大，将使近海地区的越浪稳定性减小，该项研究为北美近海地区和非洲西北近海地区的海堤设计提供了参考依据。</p> <p><b>关键字：</b>波高；周期；相关性；稳定性；越浪</p> <p>This paper analyzes measured wave data in coastal areas of North America and offshore areas of northwest Africa. The statistics of wave heights and periods observed over long periods of time in the two regions were analyzed. Using Pearson's correlation coefficient and Kendall's correlation coefficient, the correlation between wave height and</p>			

	<p>period is analyzed. Then, through the seawall overwater stability analysis model, the safety evaluation of oversea waves was made, and the relationship diagram between seawall height and safety factor and the relationship between wave height and safety factor were drawn. The results show that: with the increase of the height of the seawall, the safety of the waves in the offshore area will increase, and the increase of the wave height will reduce the stability of the waves in the offshore areas. The study is in the offshore areas of North America and offshore of northwest Africa. The design of seawalls in the area provides a reference.</p> <p><b>Key words:</b> Wave height; period; correlation; safety; overtopping</p>			
15	大型水库闸门主梁的受力分析	20144239094	张金磊	
	<p>闸门在控制泄洪方面的作用至关重要。泄水通道的主要控制措施是泄水建筑物中的闸门，它能够起到调节水位高度、控制水流流速、排放泥沙等。在地震或是强降水作用时，下游的生命财产安全和闸门的安全性密切相关。承受主要荷载关键作用的是闸门主梁，它支撑着闸门的面板。主梁的损坏会直接影响到闸门的损坏，所以这里主要对它进行探讨。</p> <p>首先，考虑静水和动水压力的作用。对闸门主梁所受到的弯曲应力，剪切应力和弯剪复合应力给出了计算方法。其次，结合闸门主梁的材料强度，对主梁的失效模式进行分析，并提供了三种应力模式下（弯曲应力，剪切应力和弯剪复合应力）的安全系数的计算方法。最后，把这些理论应用于丹江口水库和瀑布沟水库的闸门的安全性评估里，通过 R 语言描绘了作用水头与各应力以及安全系数之间的关系曲线。此研究对控制闸门主梁的水位-荷载效应的变化趋势有些许帮助，并指出了主梁在受到静动力荷载的破坏趋势，最终给出预防措施来保证主梁稳定性。</p> <p><b>关键字：</b> 弯矩；剪力；弯剪复合应力；主梁；地震效应。</p> <p>The main control measure of the discharge channel is the gate in the discharge structure, which can adjust the water level, discharge the sediment and control the flow rate of water. In the case of earthquake or heavy rainfall, the direct or indirect economic loss downstream is particularly relevant to the safety assessment of the gate. The gates' main gates provide support for the gates of the gates and is important in bearing the main load. The fail of the main beam will cause the destruction of the gate, so here it is as a research object.</p> <p>Firstly, the formulas for calculating the shear stress, bending joint stress and bending stress of the main girder of the planner gates are given for the two kinds of loads of hydrodynamic pressure and hydrostatic pressure. Secondly, the main girder's destruction mode is studied according to the strength characteristics of the main beam and the calculation formula of the safety factor of the three stress modes (shear stress, bending joint stress, and bending stress) is given. Finally, these formulas are used to the analysis of the</p>			

planner gate of Hubei Pubugou Reservoir and Danjiangkou Reservoir, and the relationship curve between the head and the stress is drawn.

The study is useful to know the judge the failure tendency of the main girder and change trend of the water level - load effect of the main girders of the gates under static and dynamic load, so as to propose preventive ways to ensure the stability of the main girder. This paper adopts the latest international popular programming language R implementation.

**Key words:** Flush gates; main girder; seismic effect ;shear; bending moment; bending joint stress.