

产品类成果

边坡稳定分析程序 STAB 和 EMU

【创新性】

边坡稳定分析程序 STAB 和 EMU 是项目完成人在边坡稳定分析领域 20 余年理论研究成果和实际工作经验的高度凝练和实际体现。该软件不仅包含了边坡稳定分析领域常用的瑞典法、Bishop 法、工程师团法、Morgenstern-Price 法、萨尔玛法等，而且包含了对 Morgenstern-Price 法和 Sarma 法的改进公式。STAB 能进行土石坝和开挖边坡在各施工运行阶段的总应力法和有效应力法的计算以及进行边坡可靠度分析，自动搜索圆弧和非圆弧滑面的最小安全系数和可靠指标。EMU 滑面可以为任意形状，能进行锚索、抗滑桩的加固设计，并能开展具有埋深、倾斜荷载和分层的地基承载力的计算。

【影响力】

截止目前，STAB 和 EMU 正版用户单位 260 家和 60 家。1984 年 STAB 被水利部规划总院批准为土石坝十个专用程序之一，2016 年和 2017 年 STAB 和 EMU 入选中国水利水电勘测设计协会颁发的水利水电勘测设计计算机软件名录。STAB 和 EMU 在工程设计中得到广泛应用，王柏乐大师主编的《中国当代土石坝工程》一书中收录的、明确在坝坡稳定分析中采用 STAB 的土石坝工程有糯扎渡、瀑布沟、小浪底、狮子坪、鲁布革、水牛家、水布垭、天生桥一级、洪家渡、紫坪铺、乌鲁瓦提、引子渡、白溪、尼尔基等。

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受奖单位：岩土所



SLOPE STABILITY ANALYSIS PROGRAMS STAB AND EMU

【Innovation】

Slope stability analysis programs STAB and EMU are the theoretical research outcomes of the project contributor in this sector based on actual working experience within 20 years. The software not only includes the Swedish, Bishop, Morgenstern-Price and Sarma methods that are commonly used in the slope stability analysis field, but also contains the improved Morgenstern-Price and Sarma methods. STAB is able to calculate the total stress method and the effective stress method for earth-rockfill dams and engineered slopes at various construction stages, analyze slope reliability, and automatically search the minimum factor of safety and reliability index of the circular and non-circular failure surfaces. The EMU program is appliance to arbitrary slip surface, conduct the reinforcing design for anchors and piles, and calculate the bearing capacity of the foundation with embedment depth, inclined loading and different structure.

【Influence】

STAB and EMU programs have respectively owned 260 and 60 authentic user units so far. In 1984, STAB was approved as one of the ten dedicated programs for earth-rockfill dams by the General Institute of Water Resources and Hydropower design, MWR; in 2016 and 2017, STAB and EMU were all listed into the directory of water resources and hydropower investigation and design computer software issued by the China Water Conservancy and Hydropower Investigation and Design Association. STAB and EMU are widely used in engineering design, and in the book earth-rockfill Dam Projects of Contemporary China, editor-in-chief Wang Bole has clarified earth-rock dam projects that adopt STAB in slope stability analysis, including Nuozhadu, Pubugou, Xiaolangdi, Shiziping, Lubuge, Shuiniujia, Shuibuya, Tianshengqiao First Stage, Hongjiadu, Zipingfu, Wuluwati, Yinzidu, Baixi and Ni'erji.

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