

## عنوان مقاله:

Physical Modeling of Pipeline Buckling in Sandy Bed

## محل انتشار:

دومین کنفرانس لوله و صنایع وابسته (سال: 1388)

تعداد صفحات اصل مقاله: 9

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## خلاصه مقاله:

Design for lateral buckling of pipelines requires knowledge of the interaction between soil and partially embedded pipes. This study is concerned with lateral soil resistances of a partially embedded pipe section for large amplitude deflections. A series of full-scale lateral pipe-soil interaction tests has been conducted in a tank of size 4.5m, 1.25m in plan. The soil bed was prepared by filling sand from 20 kg bags held at a constant height above the surface. The test comprised initial embedment under self-weight followed by 10 sweeps of travel distance of about 8-9D. All sweeps were conducted at a velocity of 1mm/s. At large pipe displacements, the lateral soil resistance was found to be increasing gradually with horizontal pipe displacement. It is therefore termed the steady accretion phase. The initial pipe settlement due to the pipe weight increased the lateral resistance due to the building up of a soil berm in front of the pipe. The passive resistance provided by an existing soil berm was found to increase with the number of cycles. The downward displacement occurring in each cycle gradually increased the size of the soil

## کلمات کلیدی:

Thermal Buckling, Physical Modeling, Soil-Pipeline-Interaction, Sand

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/76921>

