

## عنوان مقاله:

Numerical simulation of the flow around the submerged blade to counteract the spiral flow in the curvature of navigable rivers

## محل انتشار:

یازدهمین کنفرانس بین المللی مکانیک، ساخت، صنایع و مهندسی عمران (سال: 1401)

تعداد صفحات اصل مقاله: 13

## نویسندگان:

Arman Guilaninezhad - Department of Civil Engineering, Tonekabon Branch, Islamic Azad University, Tonekabon, Iran

Adeleh Saedi - Department of Civil Engineering, Tonekabon Branch, Islamic Azad University, Tonekabon, Iran

Mehdi Nezhadnaderi - Department of Civil Engineering, Tonekabon Branch, Islamic Azad University, Tonekabon, Iran

## خلاصه مقاله:

One of the effective methods for protecting the shores of navigable rivers at the site of the arches is submerged vanes. In order to study a case in the Netherlands, a numerical study was carried out on the effects of using submerged vanes on the protection of the coast in the Netherlands. In the present study, the numerical results of the impact of a submerged vane at a distance of one fourth of the width of the internal and external arc with a full arc length of 90 degrees are paid to the average velocity distribution and pressure in the arc of 90 degrees, with a width of 350 meters and a depth of 4.5 meters. The results of the study showed that the presence of a submerged vane close to the inner arch, about one quarter of the width of the internal arc produces a counterflow stream that reduces the normal secondary flow in the bends of the river. Hence, the high-velocity current, which is driven radially to the inner shore, is diverted to the middle direction. So it will improve the sedimentation on the inner shore of the bend and scouring on the outer shore of the bend. In this way, the flow rate from the mean value of one meter per second reaches 1.98 m/s in the middle region and decreases from the sedimentation in this range

## کلمات کلیدی:

.submerged vanes, Flow pattern, Secondary currents, 90 Degree bend, Coast protection

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1459404>

