

## عنوان مقاله:

Improvement of Turbine Performance by Streamwise Boundary Layer Fences

## محل انتشار:

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## خلاصه مقاله:

In the present investigations, effect of streamwise end wall fences on the performance improvement of a turbine is studied. The fences with heights of ۱۲ mm, ۱۶ mm were attached normal to the end wall and at a half pitch away from the blades. A miniaturized pressure probe was traversed at the exit of the cascade from midspan to the end wall at ۲۶ locations covering more points in the end wall region. For each spanwise location, the probe was traversed in the pitchwise direction for more than ۲۵ points covering one blade pitch. The boundary layer fence near the end wall remains effective in changing the path of pressure side of leg of horseshoe and weaken the cross flow. The overturn in flow has reduced near the end wall when fences are incorporated while outside end wall and in loss core region, it underturns slightly as result of reduction in secondary loss. The total loss is reduced by ۱۵%, ۲۵% for fences of height ۱۲ mm, and ۱۶ mm respectively. The corresponding change was obtained in the drag and lift coefficients

## کلمات کلیدی:

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