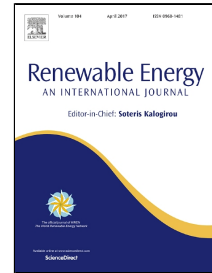


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Sediment erosion induced leakage flow from guide vane clearance gap in a low specific speed Francis turbine

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Research Highlights:

1. Phenomenon of sediment erosion in guide vanes of Francis turbine has not been investigated in details yet.
2. Experimental setup with guide vane cascade is developed to conduct measurements at flow conditions of a prototype Francis turbine.
3. Symmetric NACA profiles are found not be a good choice for high head Francis turbines.
4. Existence of a critical clearance gap size for which the leakage velocity and its affects are maximum and is revealed.
5. A strong correlation between erosion of guide vanes with the erosion of hub at runner inlet is established.

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