**Long term behaviour of composite tidal turbine blades**

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Tidal turbines are installed in areas of high energy currents where access for maintenance or replacement is limited. The long term reliability of these structures, for periods up to 25 years, is paramount and determines whether they will be commercially viable. Fibre reinforced composites, including both glass and carbon fibres, are used for the majority of existing prototypes so it is essential to understand how the properties of these materials will change with time. Studies have been performed on composite materials for marine applications at IFREMER in Brest for over 25 years, and since 2009 studies have been specifically oriented towards the durability of tidal turbine blades. This presentation will describe some of this work, with examples of applications.

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