

## ABSTRACTS SELECTED

### HERITAGE, ETHICS AND RIGHTS

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#### ***Shipwrecks as stock for particle physics experiments: new uses of the underwater cultural heritage***

On 14<sup>th</sup> May 2011 a 2000-year-old shipwreck's cargo was used as a source for experiments of particle physics. Italy's new neutrino detector bought 120 archaeological lead bricks from a shipwreck from the National Archaeological Museum of Cagliari (in Sardinia), which was built more than 2,000 years ago and recovered from the sea 20 years ago. This "roman lead" - mainly found in the anchors of sunken ships - was used because of its low radioactivity: being underwater for 2,000 years reduced by approximately 100,000 times the very low original radioactivity represented by one of its radionuclide, lead-210. This use is ethically questionable. The fact that underwater heritage belonging to the benefit of humankind, is presumably legally - or not - excavated and recovered by a Museum - or a company -, and afterwards sold or transferred for its complete destruction for experiments for the benefit of humankind, introduces a new whole legal aspect of the treatment and the protection of this heritage. The dilemma is if there is any justification on using underwater cultural heritage for legitimate -but commercial- purposes. New uses of the oceans and their patrimony -development and use of the underwater cultural heritage for different purposes- have been recently invoked by relevant international law of sea actors and their instruments. It is necessary to identify gaps and suggestions in order to analyse whether and to what extent the existing rules can be applied or modified to adequately deal with these new values.

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