Directional data arises in various studies such as spread of disease vector, wind directions during a storm, seasonality of phenomena etc. Some distributions have been proposed in statistical literature to model directional data. In this paper, we consider estimation of parameters of a wrapped Cauchy distribution. For estimating the mean direction parameter we propose the sample mean direction, the maximum likelihood estimator and the Pitman estimator. A detailed simulation study is conducted to numerically compare the risk performance of these estimators. (Received September 24, 2018)