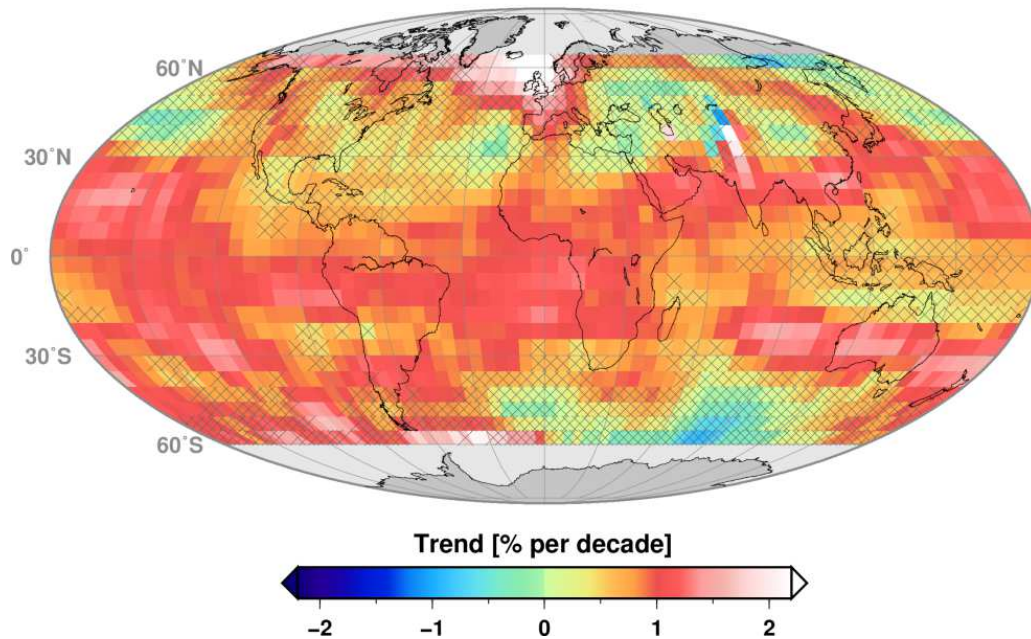


(a) GTO-ECV CCI Total Ozone



A new perspective on the current state of the ozone layer derived using the merged total ozone data record (GTO-ECV) recently released in the framework of the ESA Climate Change Initiative. Based on a multivariate regression analysis covering the 1995-2013 period, various aspects of ozone change and variability are disentangled on global and regional scales. This enables the monitoring of the effectiveness of the Montreal Protocol. Given dominant natural variability the expected mid-latitude onset of ozone recovery is still not significant and it is estimated that 5 additional years of observations would be needed for an unequivocal detection. A regional increase identified in the tropics is a likely manifestation of a long-term change in El Niño-Southern Oscillation intensity over the last two decades induced by strong El Niño in 1997/1998 and strong La Niña in 2010/2011. From Coldewey-Egbers et al. (2014).