

**Table 1** Proxy records used in the Empirical Orthogonal Function (EOF). Records are numbered the same as in fig. 1a-d.

<b>Number</b>	<b>Location</b>	<b>Proxy</b>	<b>Mode 1 Loading</b>	<b>Mode 2 Loading</b>	<b>Dating uncertainty (years)</b>	<b>Reference</b>
<b>1</b>	South West Turkey	Stable isotope and pollen	-0.19	0.32	±70	Eastwood et al., (2007)
<b>2</b>	South East Turkey	Stable isotope and pollen	-0.23	0.06	±500	Wick et al. (2003) and van Zeist and Woldring (1978) in Eastwood et al., (2007)
<b>3</b>	Turkish Black Sea Coast	Uranium Isotope ratios in speleothem	-0.33	0.32	±60	Göktürk et al., (2011)
<b>4</b>	North West Italy	Oxygen Isotope ratios in speleothem	-0.12	0.42	±70	Zanchetta et al., (2007)
<b>5</b>	Dead Sea Israel	Reconstructed lake levels	0.29	-0.24	±50	Bookman et al., (2004)
<b>6</b>	Dead Sea Israel	Reconstructed lake levels	0.39	0.12	±40	Migowski et al., (2006)
<b>7</b>	Northern Spain	Oxygen Isotope ratios in speleothem	0.37	-0.11	±150	Dominguez-Villar et al., (2008)
<b>8</b>	Norwegian Coast	Reconstructed glacier dynamics	0.41	0.20	±50	Bakke et al., (2008)
<b>9</b>	South West Norway	Reconstructed glacier dynamics	0.43	0.11	±60	Nesje et al., (2000)
<b>10</b>	Central Turkey	Stable isotope and pollen	0.11	0.53	±250	Roberts et al., (2001)
<b>11</b>	West Central Alps	Reconstructed glacier dynamics	0.17	0.40	±200	Holzhauser et al., (2005)
<b>12</b>	Central Italy	Reconstructed lake levels	0.18	0.19	±50	Magny et al., (2007)