

## Figure Legends

**Figure 1** Fluorescence excitation-emission matrices of DOC within four different molecular weight fractions (<1 kDa, panels A - E; 1 – 10kDa, panels F – J; 10 – 100 kDa, K – O; >100 kDa, P - T) of soil water from 5 grassland sites. Site 1 – Eutric Cambisol, Site 2 – Dystric Gleysol, Site 3 – Cambic Podzol, Site 4 – Haplic Podzol, Site 5 – Fibric Histosol. The values represent means of four excitation-emission matrices per site and size fraction ( $n=80$  solutions analysed), separate colours identify differences in fluorescent intensity (blue = background or low intensity, red = highest intensity; axes vary for each size fraction).

**Figure 2** Relative abundance of fluorescence signal within three distinct fluorescent regions of the soil solution obtained from five contrasting soils. The fluorescent regions were identified by PARAFAC analysis within the excitation-emission matrices shown in Figure 1. Details of the soils are provided in Table 1. The legend is the same for all panels. Values represent means  $\pm$  SEM ( $n = 4$ )

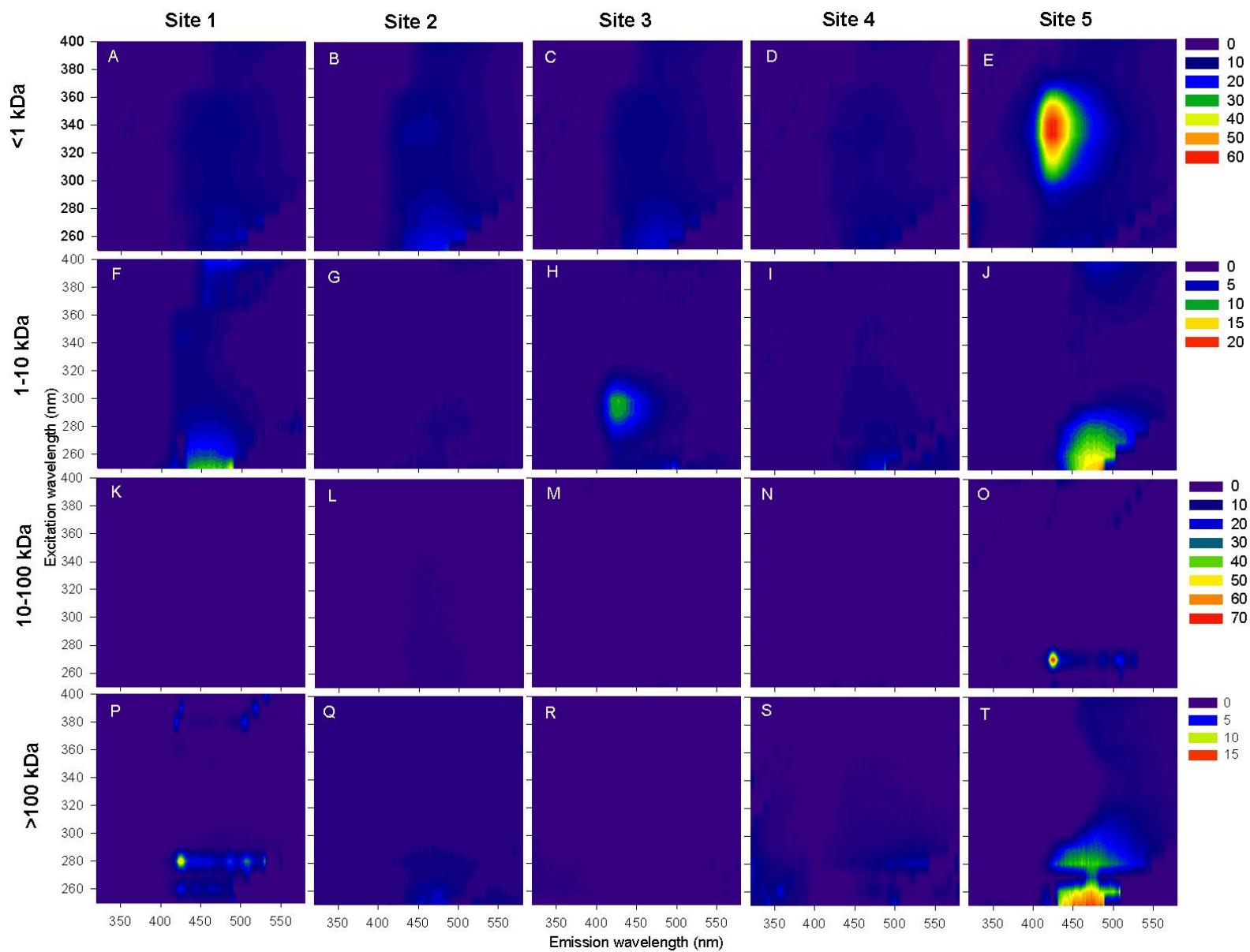
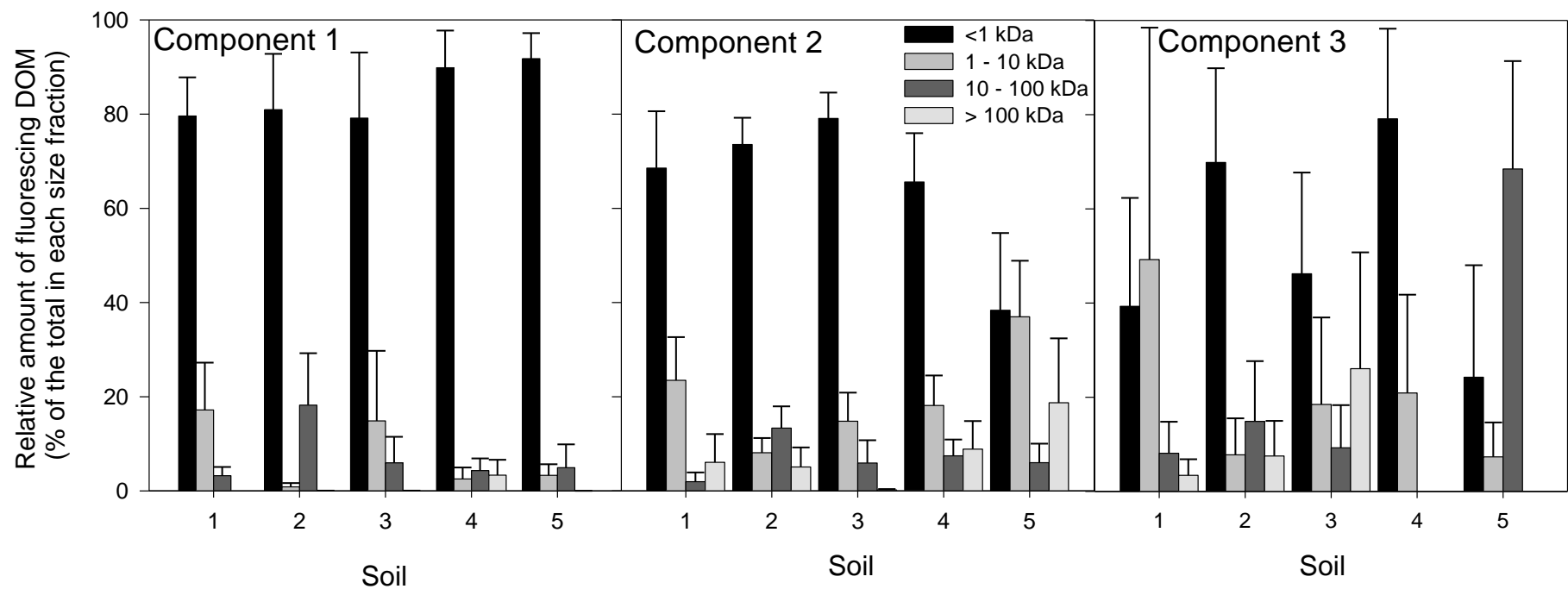


Figure 2



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