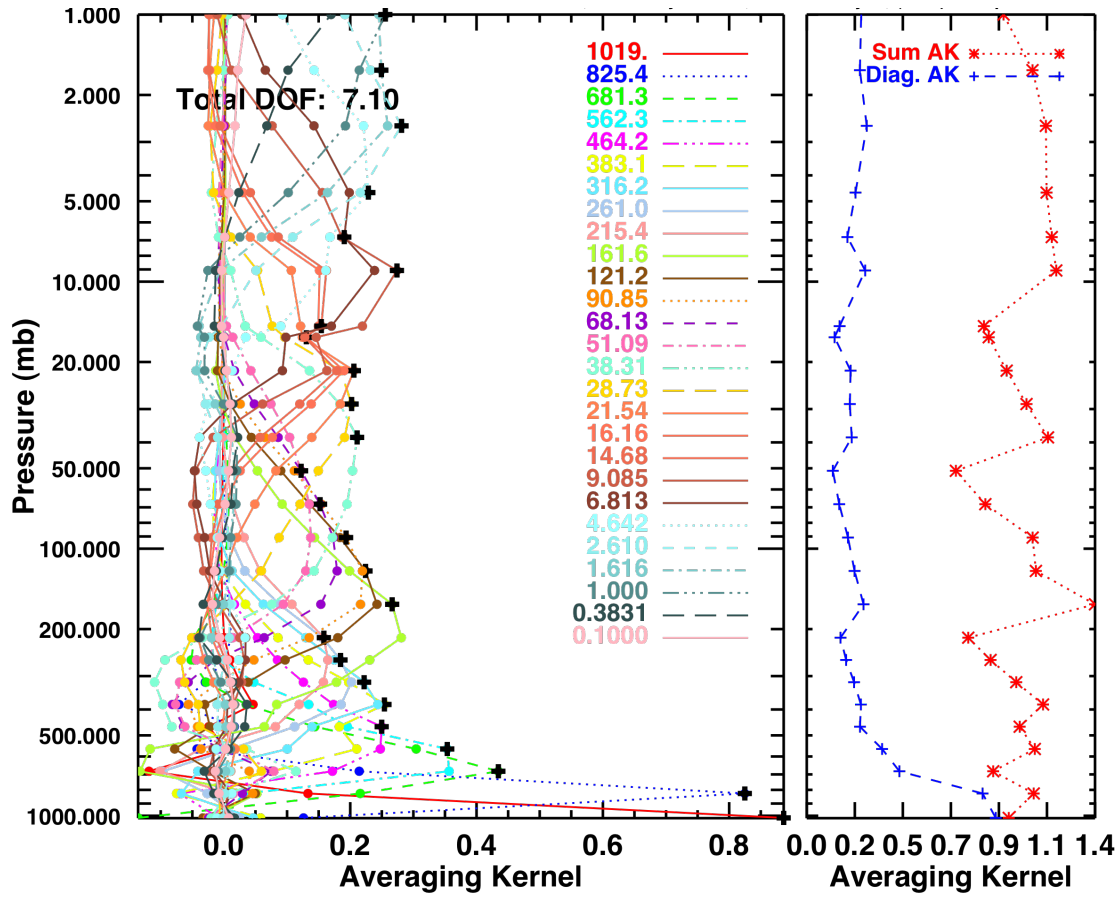


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3 Supplementary Figure 1(a). Averaging kernel for the CO₂ v₂ band temperature retrievals
 4 using LBLRTM v12.1 for an example profile with 1.5 cm PWV. The averaging kernel
 5 for LBLRTM v9.4+ (not shown) is similar.

6



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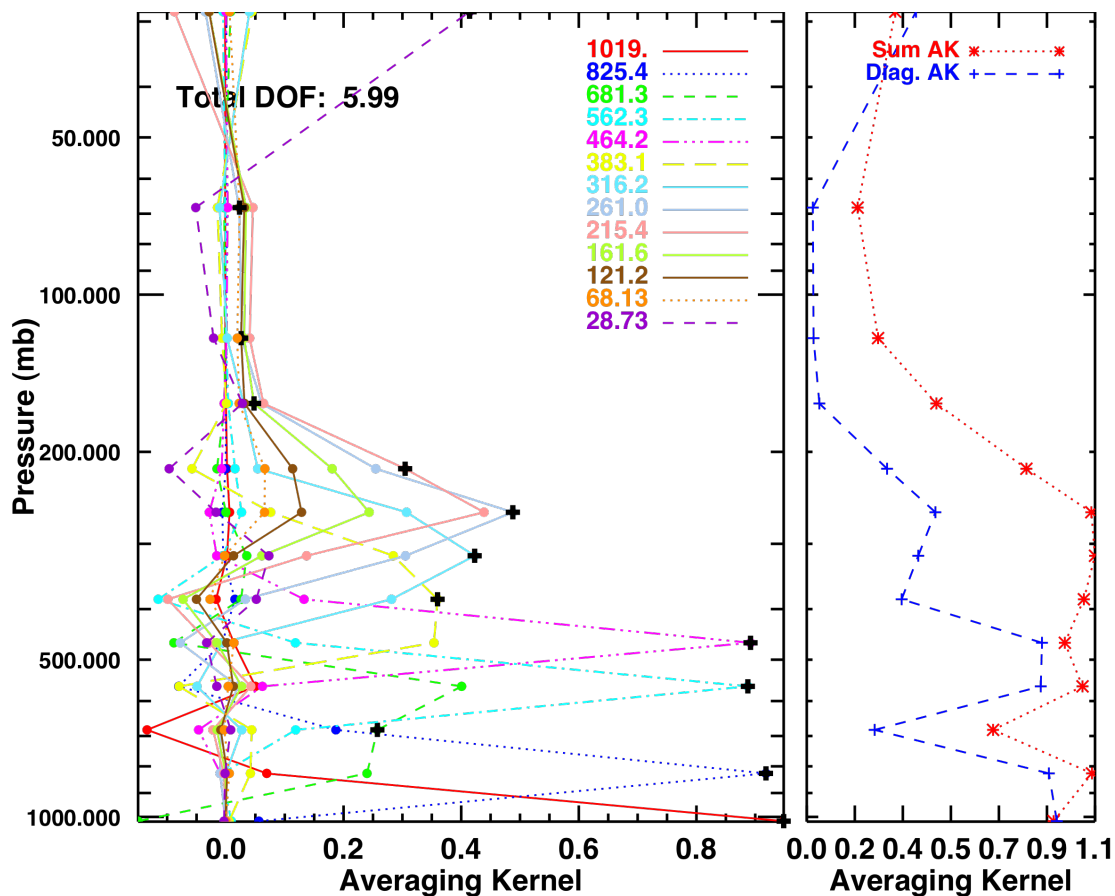
2

3 Supplementary Figure 1(b). Averaging kernel for the CO₂ v₃ band temperature retrievals

4 using LBLRTM v12.1 for an example profile with 1.5 cm PWV. The averaging kernel

5 for LBLRTM v9.4+ (not shown) is similar.

6

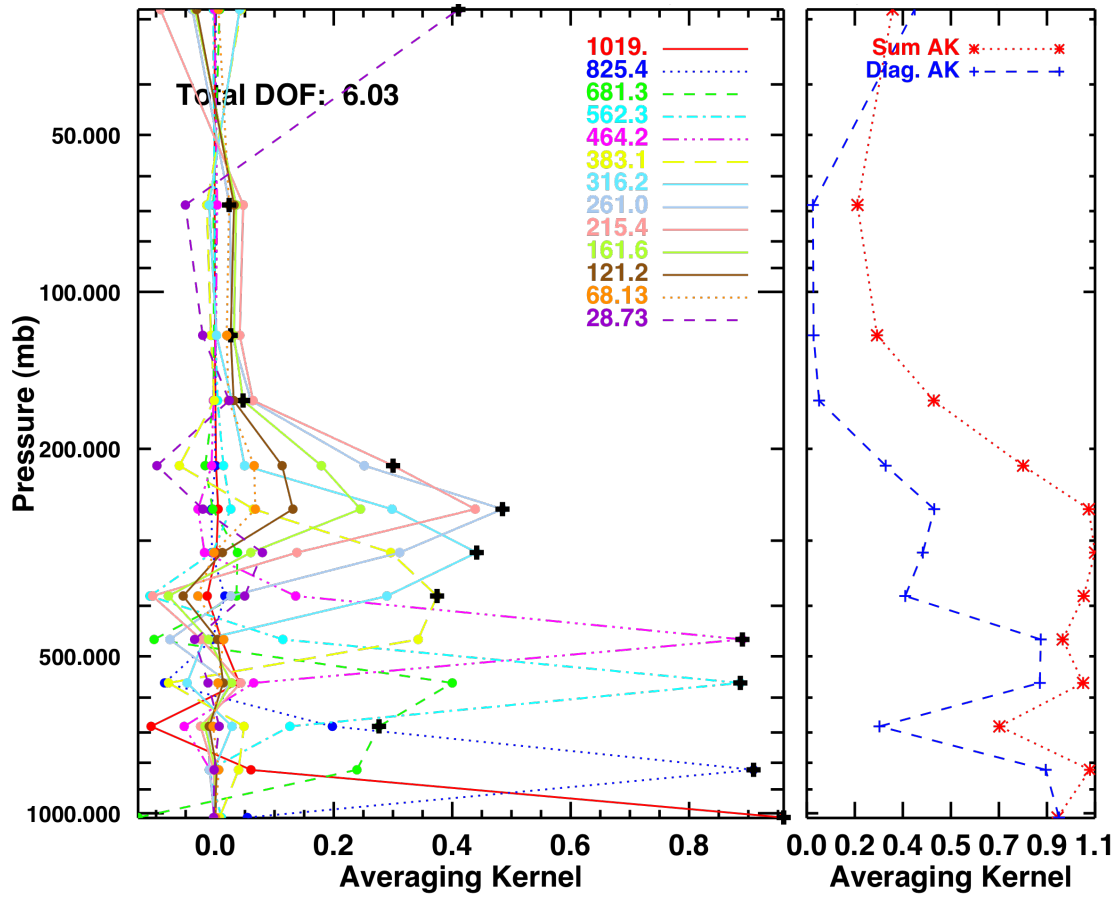


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3 Supplementary Figure 2(a). Averaging kernel for the P- and R-branch water vapor
 4 retrievals using LBLRTM v12.1 for an example profile with 1.5 cm PWV. The LBLRTM
 5 v9.4+ averaging kernel (not shown) is similar.

6

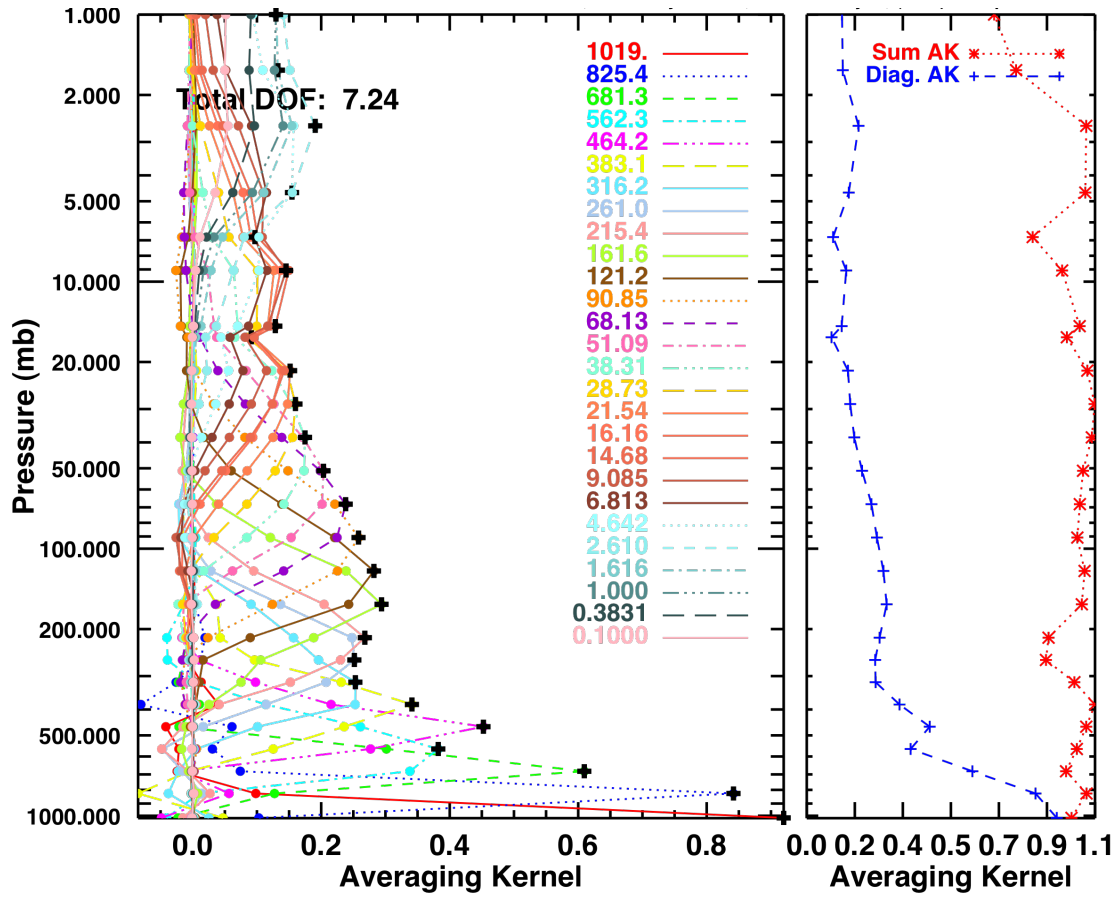


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3 Supplementary Figure 2(b). Averaging kernel for the P-branch only water vapor
 4 retrievals using LBLRTM v12.1 for an example profile with 1.5 cm PWV. The LBLRTM
 5 v9.4+ averaging kernel (not shown) is similar.

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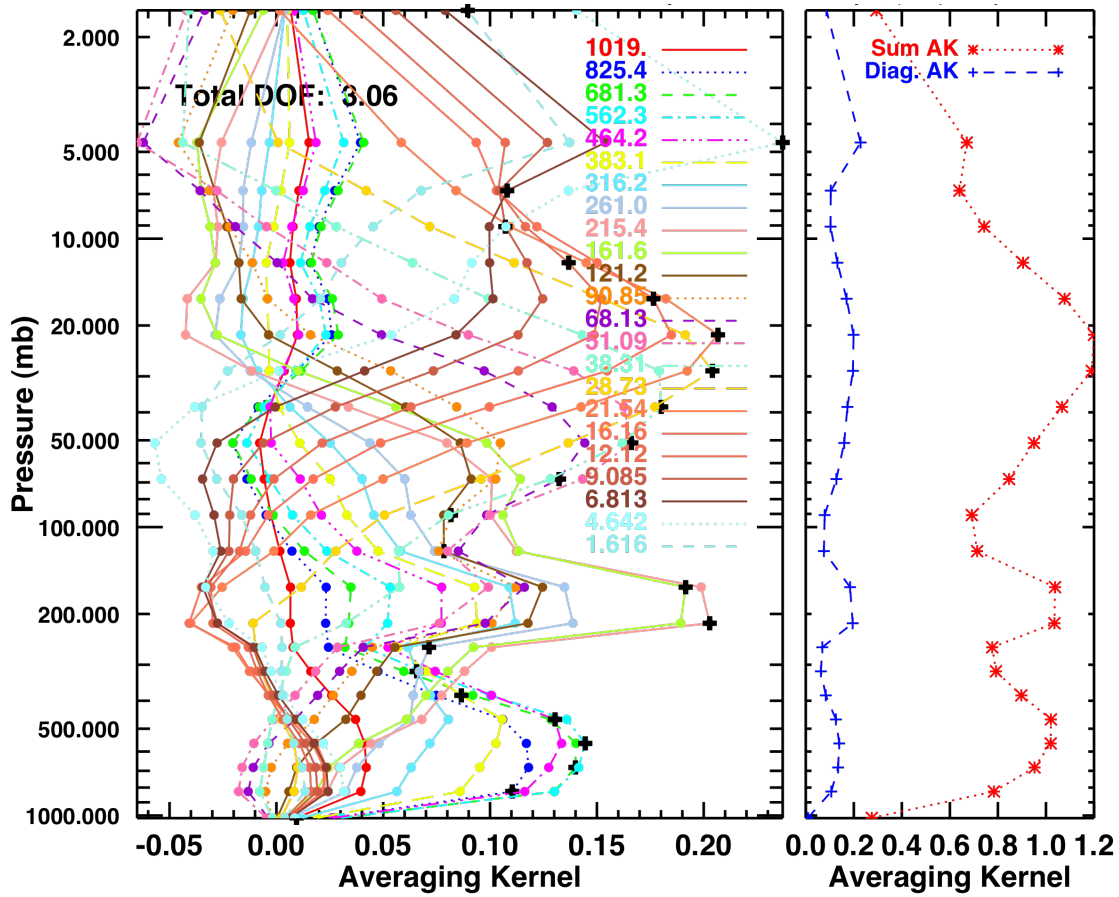


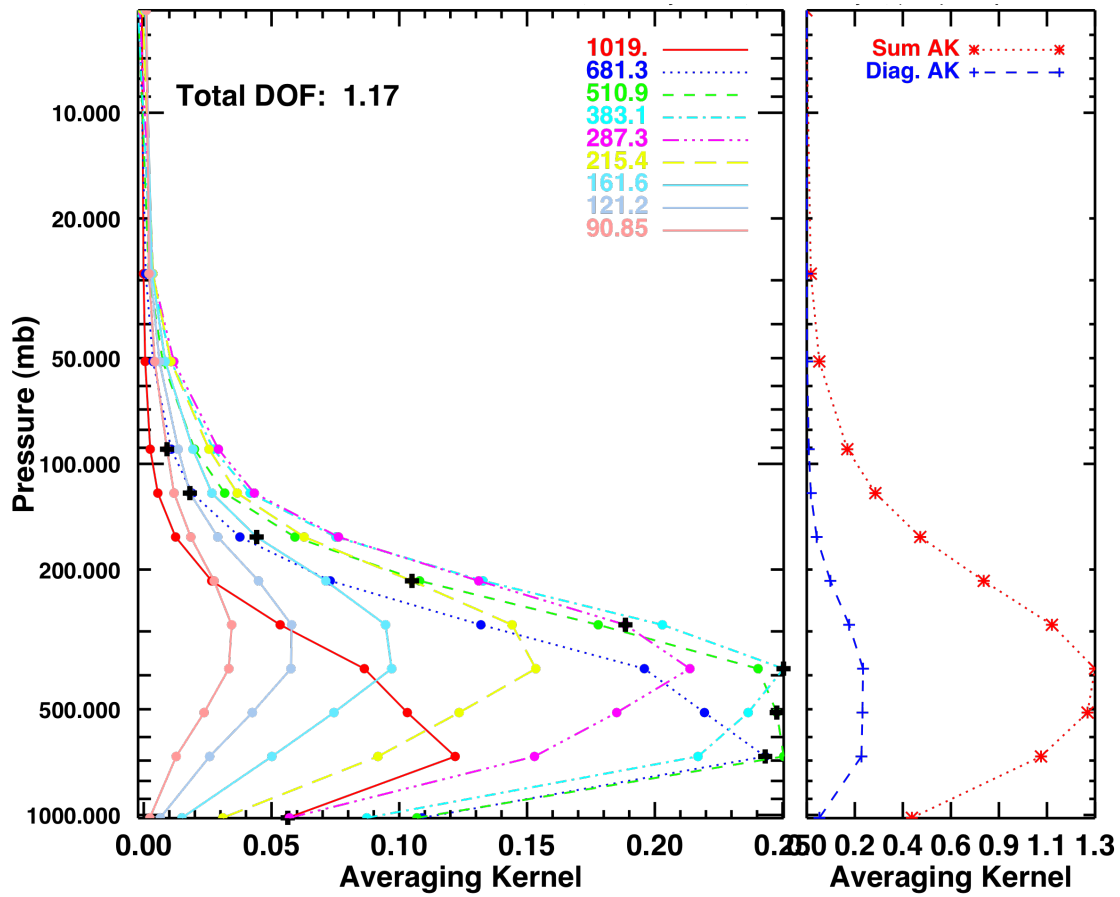
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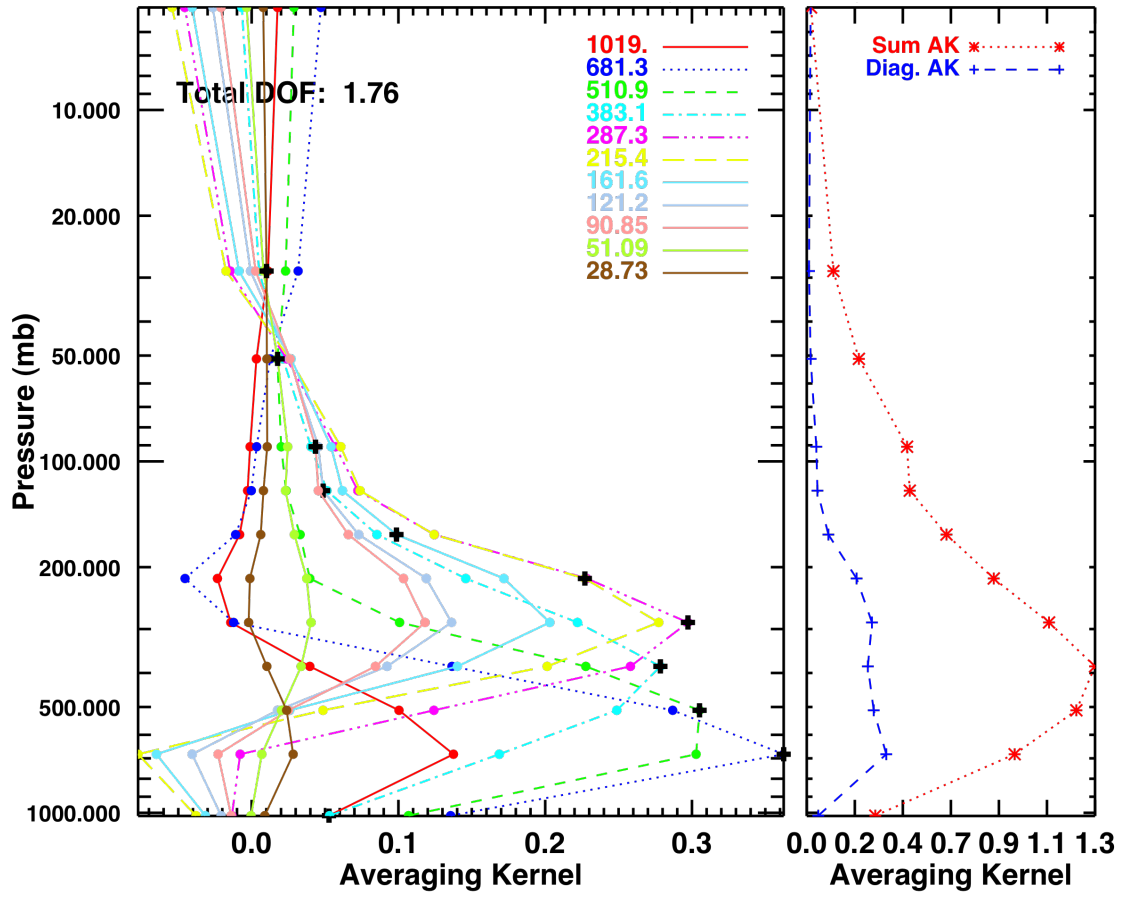
3 Supplementary Figure 3. Averaging kernel for the second, constrained CO₂ v₂ band
 4 temperature retrieval using LBLRTM v12.1 for an example profile with 1.5 cm PWV.
 5 The LBLRTM v9.4+ averaging kernel (not shown) is similar.

6





Supplementary Figure 5. Averaging kernel for the CO retrieval using LBLRTM v12.1 for an example profile with 1.5 cm PWV. The LBLRTM v9.4+ averaging kernel (not shown) is similar.



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3 Supplementary Figure 6. Averaging kernel for the CH₄ retrieval using LBLRTM v12.1
 4 for an example profile with 1.5 cm PWV. The LBLRTM v9.4+ averaging kernel (not
 5 shown) is similar.