**8102 Lab 3** Yue Lin

**Assignment Ⅰ**

The plot of kernel estimation forJapanese pine saplings data with σ = 0.05 and σ = 0.1 is shown in Figure 1. As the value of σ increases, the output trend tends to be smoother, and the overall estimated values decrease as well.

A picture containing indoor, sitting, electronics

Description automatically generated

Figure 1. Plot of kernel estimation for Japanese pine saplings data with σ = 0.05 and σ = 0.1, respectively.

**Assignment Ⅱ**

The plots of *Ghat*, *Fhat*, *Khat*, and *Lhat* for Japanese pine saplings dataare shown in Figure 2 and Figure 3.

A close up of a map

Description automatically generated

Figure 2. Ghat and Fhat for Japanese pine saplings data (without specifying xlim argument).

A screenshot of a cell phone

Description automatically generated

Figure 3. Khat and Lhat for Japanese pine saplings data (without specifying xlim argument).

**Assignment Ⅲ**

The plot of *Ghat* and *Fhat* with simulating bounds for Japanese pine saplings data is shown in Figure 4.

A close up of a map

Description automatically generated

Figure 4. Plot of Ghat and Fhat with simulating bounds for Japanese pine saplings data.

**Assignment Ⅳ**

The plot of *Khat* with simulating bounds for Japanese pine saplings data is shown in Figure 5.

A close up of a map

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Figure 5. Plot of Khat with simulating bounds for Japanese pine saplings data.

**Assignment Ⅴ**

The plot of kernel estimation California redwood tree saplings data with σ = 0.05 and σ = 0.1 is shown in Figure 6.

A picture containing indoor, sitting, object

Description automatically generated

Figure 6. Plot of kernel estimation for California redwood tree saplings data with σ = 0.05 and σ = 0.1, respectively.

The plots of *Ghat*, *Fhat*, *Khat*, and *Lhat* for California redwood tree saplings dataare shown in Figure 7 and Figure 8.

A screenshot of a cell phone

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Figure 7. Ghat and Fhat for California redwood tree saplings data (without specifying xlim argument).

A screenshot of a cell phone

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Figure 8. Khat and Lhat for California redwood tree saplings data (without specifying xlim argument).

A close up of a map

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Figure 9. Plot of Fhat and Khat with simulating bounds for California redwood tree saplings data.

A close up of a computer

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Figure 10. Plot of kernel estimation for regular point pattern with σ = 0.05 and σ = 0.1, respectively.

A screenshot of a cell phone

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Figure 11. Ghat and Fhat for regular point pattern (without specifying xlim argument).

A close up of a map

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Figure 12. Khat and Lhat for regular point pattern (without specifying xlim argument).

A close up of a map

Description automatically generated

Figure 13. Plot of Fhat and Khat with simulating bounds for regular point pattern.