not only for small values of \( L \), but for any value of \( L \). For a Poisson spectrum one has \( F(0;L) = E(0;L) \); it is irrelevant whether the interval \( L \) starts or not at a level.

On Fig.II.4 are reproduced the functions \( E(\kappa;L) \) in the interval \( 0 \leq L \leq 5 \). They can be used, for instance, to compute via (II-32) the values of \( \gamma_1(L) \) and \( \gamma_2(L) \) to be discussed later (this is a more practical method than to use the general expressions of \( k \)-level cluster functions). For adjacent spacings, the correlation coefficient (I-37) is \( C = -0.271 \), to be compared to 0 for a Poisson spectrum.

A closed expression has been given for the \( k \)-level cluster functions \( Y_k \) [Me-71,Dy-70]

\[
Y_k(x) = 1
\]

\[
Y_k(x_1,\ldots,x_k) = \frac{-1}{2} \text{Tr} \sum_p [\sigma(x_p)\sigma(x_{p+1})\cdots\sigma(x_{p+k-1})]
\]

\[ k \geq 2 \]  

(II-40)

where \( \sum_p \) denotes a sum over the \( (k-1)! \) distinct cyclic permutations of the indices \( (1,2,\ldots,k) \), where \( x_{p+k} = x_p - x_j \), and where \( \sigma \) is a 2-dimensional matrix given by

\[
\sigma(x) = \begin{pmatrix} s(x) & Ds(x) \\ Js(x) & s(x) \end{pmatrix}
\]

(II-41)

In (II-41) \( s(x) \), \( Ds(x) \), \( Js(x) \) are given by

\[
s(x) = \sin \pi x / \pi x
\]

\[
Ds(x) = \frac{d}{dx} s(x)
\]

(II-42)

and

\[
Js(x) = \frac{d}{dx} s(x)
\]

(II-42')

\[
\left\{ \begin{array}{ll}
JS(x) = \int_0^{x'} s(x')dx' \\
S(x) = \left\{ \begin{array}{ll}
y_2 & x > 0 \\
y_2 & x = 0 \\
y_2 & x < 0
\end{array} \right.
\end{array} \right.
\]

(II-42'')