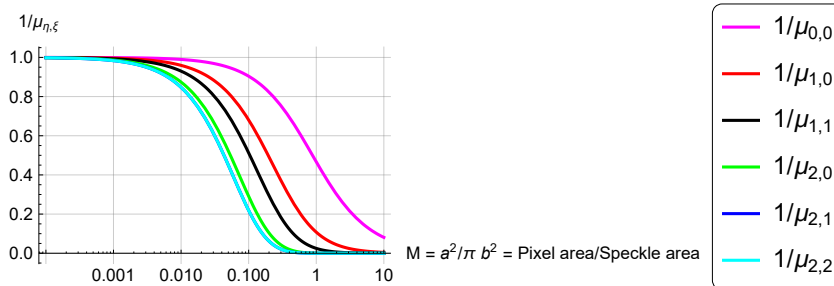


```
In[1]:= MuInvFactor[m_, η_] := (Exp[-π m (η - 1)^2] - 2 Exp[-π m η^2] + Exp[-π m (η + 1)^2] +
    π √m ((η - 1) Erf[√π m (η - 1)] - 2 η Erf[√π m η] + (η + 1) Erf[√π m (η + 1)]))

MuInv[m_, η_, ξ_] := 1 / (4 π^2 m^2) MuInvFactor[m, η] * MuInvFactor[m, ξ]
```

```
In[23]:= (*
%Calculating the correlation factors mu,for the first 6 correlation
%factors
*)
LogLinearPlot[{MuInv[m, 0, 0], MuInv[m, 1, 0], MuInv[m, 1, 1], MuInv[m, 2, 0],
    MuInv[m, 2, 1], MuInv[m, 2, 1]}, {m, 1 * 10^-4, 10}, PlotLegends -> LineLegend[
    {"1/μ0,0", "1/μ1,0", "1/μ1,1", "1/μ2,0", "1/μ2,1", "1/μ2,2"}, LegendFunction -> Frame],
    PlotStyle -> {Magenta, Red, Black, Green, Blue, Cyan}, GridLines -> Automatic,
    AxesLabel -> {"M = a^2/π b^2 = Pixel area/Speckle area", "1/μη,ξ"}]
```

Out[23]=



```

In[5]:= (*
%contraste espacial
% 2p+1≤sqrt(N)
      [valor numérico]
% M=area pixel/area speckle
*)
Ks[m_, n_, p_] :=
Module[{lateral, diagonal, knight, eta, xi, correccion, central, RETURN},
  [módulo]

  lateral = diagonal = knight = 0;
  central = MuInv[m, 0, 0];
  If[n > 1,
    [si]

    For[eta = 1, eta ≤ p, eta++,
      [para cada]

      lateral = lateral + (√n - eta) √n MuInv[m, eta, 0];
      diagonal = diagonal + (√n - eta)2 MuInv[m, eta, eta];
    ]; (*end for p*)
    lateral = 4 * lateral;
    diagonal = 4 * diagonal;

    For[xi = 1, xi ≤ (p - 1), xi++,
      [para cada]

      For[eta = xi + 1, eta ≤ p, eta++,
        [para cada]

        knight = knight + (√n - eta) (√n - xi) MuInv[m, eta, xi];
      ] (*fin del for eta*)
    ]; (*fin del for xi*)
    knight = 8 knight;
    correccion = lateral + diagonal + knight;
    correccion =  $\frac{\text{correccion}}{n (n - 1)}$ ;
    , (*else*)
    correccion = 0;
  ]; (*fin if*)
  RETURN = central - correccion;
  RETURN = √RETURN
]

```

In[17]:=

```

(*
%contrast for 1x1,3x3,5x5,7x7 sliding window respectively
*)
LogLinearPlot[{Ks[m, 1^2, 0], Ks[m, 3^2, 1], Ks[m, 5^2, 2]}, {m, 0.01, 10},
  representaci3n log lineal
  PlotLegends -> LineLegend[{"Ks(1,0)", "Ks(3^2,1)", "Ks(5^2,2)"}, LegendFunction -> Frame],
  leyendas de rep... l3nea leyenda funci3n de leyenda marco
  PlotStyle -> {Blue, Magenta, Black},
  estilo de repre... azul magenta negro
  AxesLabel -> {"M = a^2/π b^2 = Pixel area/Speckle area", "Ks(N,p)"}]
  etiqueta de ejes valor num3rico

```

Out[17]=

