

In[3106]:=

```

A = 0.95;
t = {0.0, 93.89726754105959, 109.27286616210131, 304.5015083084968,
      354.20882759062835, 516.0996217033835, 595.3486976208007, 612.4269729224769,
      693.0542224176089, 1151.0945050683831, 1303.9467485010664, 1307.3793231972409,
      1320.9686128699059, 1394.320733031109, 1409.4079476921945, 1498.041758884286,
      1540.3501108160574, 1564.6176043357561, 1908.1368996371425, 2093.071390093901,
      2259.3538245475997, 2473.810947183222, 2609.5232781225495, 2661.3430974298744,
      2742.7235554129034, 2836.7572231004397, 3804.2895381799844,
      3834.2475412273807, 4542.916554186472, 4881.336150793551, 5044.141586021939,
      5107.4257141657, 5163.177713585978, 5187.348528725459, 5535.232421508152,
      6294.806145980959, 6312.247938011174, 6504.711465142915, 6718.4768822834185,
      7095.494808308964, 7144.0927528826805, 7816.407644005818, 7899.569832786991,
      8086.613726780555, 8112.299452802099, 8231.607944176318, 8898.09770149308,
      9140.536359189757, 9149.492717047107, 9623.422893962, 10039.283319786562};
T = {93.89726754105959, 15.375598621041716, 195.22864214639546,
      49.70731928213155, 161.8907941127551, 79.2490759174173, 17.078275301676175,
      80.627249495132, 458.04028265077426, 152.85224343268334, 3.432574696174488,
      13.589289672664954, 73.35212016120313, 15.087214661085461, 88.63381119209168,
      42.308351931771334, 24.267493519698835, 343.5192953013864, 184.9344904567581,
      166.28243445369887, 214.4571226356223, 135.7123309393273, 51.8198193073251,
      81.38045798302886, 94.0336676875361, 967.5323150795447, 29.958003047396353,
      708.6690129590916, 338.419596607078, 162.8054352283882, 63.284128143760945,
      55.751999420278544, 24.17081513948052, 347.8838927826927, 759.5737244728072,
      17.441792030214533, 192.4635271317409, 213.76541714050393, 377.01792602554576,
      48.597944573716184, 672.3148911231369, 83.16218878117377, 187.0438939935643,
      25.685726021543697, 119.30849137421806, 666.489757316762, 242.43865769667784,
      8.956357857350094, 473.93017691489297, 415.8604258245611};

```

$$F[\{c_ , y_ \}] = \{n/c - \text{Sum}[y * \text{Exp}[-y * A * t[i]] * T[i], \{i, 1, n\}], \\ n/y - \text{Sum}[A * t[i], \{i, 1, n\}] - \text{Sum}[c * \text{Exp}[-y * A * t[i]] * T[i], \{i, 1, n\}] + \\ \text{Sum}[y * c * A * t[i] * \text{Exp}[-y * A * t[i]] * T[i], \{i, 1, n\}]\};$$

$$\text{jacobian}[\{c_ , y_ \}] = \text{Transpose}[\{D[F[\{c, y\}], c], D[F[\{c, y\}], y]\};$$

```

NewtonSystem[X0_, max_] := Module[{}, n = 2;
k = 0;
Dp = {0, 0};
P0 = X0;
F0 = F[P0];
Print["F", P0, "=", N[F0, 3]];

```

```

P1 = P0;
F1 = F0;
While[k < max, k = k + 1;
  P0 = P1;
  F0 = F1;
  J0 = jacobian[P0];
  det = Det[J0];
  If[det == 0, Dp = {0, 0}, Dp = Inverse[Rationalize[J0, 0]].F0];
  P1 = P0 - Dp;
  Print["Dist. radici =", EuclideanDistance[P0, P1]];
  F1 = F[P1];
  Print["F[" , P1, "]=", N[F1, 3]];
];
];
NewtonSystem[{60, 0.00013431175634068146}, 6]

F[{60, 0.000134312}]= {0.0522121, 5874.34}
Dist. radici =5.97085
F[{65.9708, 0.000124112}]= {0.00892361, -146.372}
Dist. radici =2.77785
F[{68.7487, 0.000117132}]= {0.00201157, 330.087}
Dist. radici =0.50162
F[{69.2503, 0.000116192}]= {0.0000521657, 4.38966}
Dist. radici =0.0180257
F[{69.2683, 0.000116153}]= {7.19662 × 10-8, 0.0107625}
Dist. radici =0.0000203013
F[{69.2684, 0.000116153}]= {8.62643 × 10-14, 9.31323 × 10-9}
Dist. radici =2.78533 × 10-11
F[{69.2684, 0.000116153}]= {1.11022 × 10-16, -1.16415 × 10-10}

```