(1) Calcule $\{A2\} = \log \underbrace{\{A0\}}_{x}$ à $\Delta\{A2\} = 2^{-\Psi}$

$x > 0$

```
XALOG : CLR  D0  (struck through)
        CMP   #$4001,(A0)
        BEQ   XPOSE          log 1 = 0
        MOVE.L  A0,A2
        BSR   KB255          x = [A0]/[A1]
        BSR   XCMP1          cmp  A1,A0
        BCC   KL87      -> x > 1
        MOVE.L  A2,A0        0 < x < 1
        BSR   XINVS2
        MOVE.L  A2,-(SP)
        BSR   KL87
        BSET  #7,(A2)
KL860 : MOVE.L  (SP),A0
        BSR   XLB76
        MOVE.L  (SP)+,A2
        RTS
(SP)                           met log{A2}    {A2} > 1
KL87 :  MOVE.L  A2,A0
        MOVE  TPREC1,D3        X+
        BSR   XINTE            <A2> = (α, X)    x = 2^-α X      x ~ 2^(X-α)
                                                       X+ε
        CLR   -(SP)
KL88 :  MOVE  TPREC1,D3        X
        SUB   (A2),D3          X-α
```

$2^{1-X-\varepsilon}$

$\alpha = X + \varepsilon - 1$

détermine $x_i = x_0^{\frac{1}{2^i}}$

$x_i - 1$ à la précision χ

arrêt si $x_i - 1 \sim 2^{-\Psi}$

```
KL87: MOVE.L   A2,A0          x0
      LEA      TCONST1,A1     1
      BSR      XSUBS2                 x0-1
      MOVE     TPREC1,D3
      MOVE.L   A2,-(SP)  <-- CLR.L -(SP)   i=0
      MOVE.L   A2,A0
      BSR      XINTE                  x0-1=(α,D0) = 2^-α D
      MOVE.L   (SP),A0                                  χ
KL88: BSR      XLB76
      MOVE.L   (SP),A2
      BSR      XAORD
      BEQ      KL89                   -> fin
      ADDQ     #1,6(SP)               i=i+1
      LEA      2(A2),A0   ⊗   (struck through)
                                      D    {ADD  D2,D2
      MOVE     TPREC1,D2  <-- {ADDQ #1,D2  {SUB  D0,D2
      BSR      XROT           {BCLR #0,D2
      MOVE.L   (SP),A0        {AND  #1,D1  ]⊗
      ADD      (A0),D2        {ADD  D1,D2  ]
      MOVE     D2,-(SP)
      MOVE     D2,D1                  β
      MOVE.L   A2,A0              A0=D'i = 2^-β (xi-1)
      BSR      XXP2N                  1^β
      MOVE.L   A2,A1
      BSR      XADDS1                 2^β + D'i
      MOVE.L   A2,A0
      BSR      SQRT1F    ⊗            √(2^β+D'i) = 2^β x(i+1)
      MOVE.L   A2,A0
      MOVE     (SP),D1
      ASR      #1,D1                  β/2
      BSR      XXP2N                  D(i+1) = 2^β [x(i+1) - 1]
      MOVE     (SP)+,D1   <-- {MOVE.L A2,A1  <-- BSET #7,(A1)
      ASR      #1,D1          {BSR    XADDS1
      MOVE.L   (SP),A0                        A2=
      MOVE     D1,(A0)+
      BRA      KL88
```

Pile : | i | ⟨$x_i - 1$⟩ | ⊠ | i |

$x_i \sim 2^u \quad x_i - 1 = 2^{-\alpha} \frac{A}{\ell}$

$2^{2\psi - \ell}$

(1)

```
KL89: BSET  #7,(A0)
KL89: MOVE.L (SP),A0
      SUBQ  #2,A0

      BSET  #7,2(A0)
      LEA   XSER3L,A3
      BSR   XSER1E
      MOVE.L (SP),A0
      ADDQ  #2,A0
      MOVE.L A2,A1
      BSR   XMULS1
⊗ KL91: MOVE.L (SP)+,A0
      MOVE.L (SP)+,D1
      MOVE.L A0,-(SP)

      SUB   (A0),D1
      BSR   XXP2N
      MOVE.L A2,A0
      BSR   XMULS2
      BRA   KL860
```

mat signe : $\langle A2 \rangle = x_N - 1 = (\alpha', D) = 2^{\alpha'} D$

$A2 = 2^{\alpha'} S$

$\langle x_N - 1 \rangle$

BCLR #7,(A0)

```
      MOVE.L (SP)+,A0
      MOVE   (A0),D2
KL90: BSR   XROR
      MOVE.L A2,A1
```

⊗ $[A2] \rightarrow \frac{[A2]}{2^{D2}}$

$2^{N-\alpha'}$