```
member-es-interval  THM

⊢  ∀es:ES, e,e',ev:E. (ev ∈ [e, e']) ⟺ e ≤ ev  & ev ≤ e'   by UnivCD
|
1. es : ES
2. e : E
3. e' : E
4. ev : E
⊢  (ev ∈ [e, e']) ⟺ e ≤ ev  & ev ≤ e'
| by ((Unfold `es-interval` 0
|      THEN
|      RWO
|      Thm* ∀P:(T→𝔹), L:T List, x:T.
|           (x ∈ filter(P;L)) ⟺ (x ∈ L) & P(x)
|      {member_filter}
|      0)
|     THEN
|     (Reduce 0)
|     THEN
|     (RWO
|      Thm* ∀x:T, l1,l2:T List. (x ∈ l1 @ l2) ⟺ (x ∈ l1) ∨ (x ∈ l2)
|      {member_append}
|      0)
|     THEN
|     (RWO
|      Thm* ∀the_es:ES, e',e:E. (e ∈ before(e')) ⟺ (e <loc e')
|      {member_DASH_es_DASH_before}
|      0)
|     THEN
|     (RWO
|      Thm* ∀l:T List, a,x:T. (x ∈ [a / l]) ⟺ x = a ∨ (x ∈ l)
|      {cons_member}
|      0)
|     THEN
|     (RWO Thm* ∀x:T. (x ∈ nil) ⟺ False    {nil_member} 0)
|     THEN
|     (RWO
|      Thm* ∀es:ES, e,e':E. es-ble{i:l}(es;e;e') ⟺ e ≤ e'
|      {assert_DASH_es_DASH_ble}
|      0))
|    THENA
|    Reduce 0
|
1. es : ES
2. e : E
3. e' : E
4. ev : E
⊢  (ev <loc e') ∨ ev = e' ∨ False & e ≤ ev  ⟺ e ≤ ev  & ev ≤ e'
| by Auto THEN SplitOrHyps
|    THEN
|    Try
|    (Unfold `es-le` 0
|     THEN
|     ((OrLeft THEN Complete Auto)
|      ORELSE
```

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|       (OrRight THEN Complete Auto)))
|
1. es : ES
2. e : E
3. e' : E
4. ev : E
5. e ≤ ev
6. ev ≤ e'
⊢  (ev <loc e') ∨ ev = e' ∨ False
| by Unfold `es-le` -1 THEN ParallelOp -1
|
1. es : ES
2. e : E
3. e' : E
4. ev : E
5. e ≤ ev
6. ev = e'
⊢  ev = e' ∨ False  by OrLeft
END
```