



## 1 Decay Scheme

At-219 undergoes approximately 3% beta-minus decay to the ground state of Rn-219, and approximately 97% alpha-particle decay to the ground state of Bi-215.

*L'astate 219 se désintègre par émission bêta moins vers le niveau fondamental du radon 219 (~ 3 %), et par émission alpha vers le niveau fondamental du bismuth 215 (~ 97 %).*

## 2 Nuclear Data

$T_{1/2}({}^{219}\text{At})$	:	56	(4)	s
$T_{1/2}({}^{219}\text{Rn})$	:	3,98	(3)	s
$T_{1/2}({}^{215}\text{Bi})$	:	7,6	(2)	min
$Q^{-}({}^{219}\text{At})$	:	1566	(3)	keV
$Q^{\alpha}({}^{219}\text{At})$	:	6324	(15)	keV

### 2.1 $\alpha$ Transitions

	Energy keV	Probability × 100	F
$\alpha_{0,0}$	6324 (15)	~ 97	~ 1,07

### 2.2 $\beta^{-}$ Transitions

	Energy keV	Probability × 100	Nature	lg <i>ft</i>
$\beta_{0,0}^{-}$	1566 (3)	~ 3	1st forbidden	~ 6,2

### 3 $\alpha$ Emissions

	Energy keV	Probability $\times 100$
$\alpha_{0,0}$	6208 (15)	$\sim 97$

### 4 Electron Emissions

	Energy keV	Electrons per 100 disint.
$\beta_{0,0}^-$	max: 1566 (3)	$\sim 3$
$\beta_{0,0}^-$	avg: 547 (2)	

### 5 Main Production Modes

U – 235(4n + 3) decay chain

Th – 232(p,x)At – 219

### 6 References

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