

## V L A D I M I R P A A R

Rođen je 1942. godine u Zagrebu. Osnovnu školu polazio je u Samoboru, a srednju školu na V. gimnaziji u Zagrebu. Diplomirao je u rujnu 1965. godine s temom iz teorijske fizike elementarnih čestica (voditelj prof. Dubravko Tadić), sa srednjom ocjenom u toku studija 5,0. Po odsluženju vojnog roka zaposlio se na Institutu »Ruđer Bošković«. Godine 1969. magistrirao je iz teorijske nuklearne fizike s metodom grafova u reprezentaciji angularnog momenta i doktorirao je 1971. s temom iz nuklearne teorije polja i teorijskog modela grozdova i vibracija (voditelj prof. Gaja Alaga). Godine 1976. prešao je s Instituta »Ruđer Bošković« na Prirodoslovno-matematički fakultet u zvanju izvanredni profesor i 1981. godine unaprijeđen je u redovitog profesora.

U razdoblju 1969—1972. boravio je na specijalizaciji na Institut Niels Bohr u Kopenhagenu. Kasnije je za kraćih posjeta znanstveno radio na nizu znanstvenih instituta i fakulteta u inozemstvu: u SAD, SSSR, Velikoj Britaniji, SR Njemačkoj, Francuskoj, Italiji, Brazilu, Nizozemskoj, Švedskoj i Madžarskoj. Razvio je obimnu međunarodnu znanstvenu suradnju s teorijskim i eksperimentalnim fizičarima iz tridesetak zemalja.

Publicirao je 255 znanstvenih radova iz teorijske fizike, od čega 131 u međunarodnim znanstvenim časopisima a 124 u zbornicima znanstvenih konferencija i knjigama. Osim toga autor je 36 stručnih publikacija iz problematike energetike, strategije tehnološkog razvoja i obrazovanja i 26 članaka na popularizaciji znanosti. Kao autor ili urednik publicirao je i 11 knjiga.

Okolo pola od ukupnog broja znanstvenih radova V. Paara su u okviru »Zagrebačke škole« za strukturu atomske jezgre, a pola su rezultat međunarodne znanstvene suradnje. Glavna područja znanstvene aktivnosti V. Paara su model grozdova i vibracija, supravodljiva nuklearna teorija polja, bozonsko-termionski modeli, dinamičke simetrije i supersimetrije za atomsku jezgru i teorija uređenog kvantnog kaosa i regularnosti, pri čemu je posljednje tri problematike prvi uveo u našu sredinu. U nizu znanstvenih radova surađivao je s eksperimentalnim fizičarima, dajući teorijska objašnjenja rezultata eksperimenata. Radovi V. Paara citirani su u Science Index s preko 1300 citata, od čega se 850 citata odnosi na publikacije u kojima je prvi ili jedini autor. Dosad najcitiraniji rad V. Paara (kome je jedini autor) citiran je 155 puta.

V. Paar je obavljao niz društveno-stručnih dužnosti, osim ostalog bio je predsjednik Društva matematičara i fizičara Hrvatske i pročelnik Fizičkog odjela na Prirodoslovno-matematičkom fakultetu.

Dobitnik je Republičke nagrade »Ruđer Bošković« za značajno znanstveno otkriće iz teorijske fizike i Republičke nagrade »Ruđer Bošković« za popularizaciju znanosti.

V. Paar je istaknuti teorijski fizičar u području nuklearne fizike, najaktivniji i najuspješniji u srednjoj generaciji naših teoretskih nuklearnih fizičara. Izvanredno je plodan u svom znanstvenom radu: objavio je, uz ostalo, 114 originalnih znanstvenih radova u poznatim svjetskim znanstvenim časopisima, od kojih 30 u časopisu »Physics Letters«. Također je razvio opsežnu međunarodnu znanstvenu suradnju. U svom istraživačkom radu postigao je svjetski zapažene rezultate u više područja, od kojih posebno ističemo ova:

Model grozdova i vibracija; u tom području pridonio je daljoj generalizaciji i afirmaciji tog modela i u tom okviru otkrio  $I = j - 1$ ,  $j - 2$  anomaliju, kvazi —  $f_{7/2}$  strukturu i sudjelovao u otkriću mehanizma rotacijskih vrpce.

Nuklearne supersimetrije; u tom području otkrio je novi tip supersimetrije  $SU^B(3) \times SU^F(2j + 1) \cdot SU^{BF}(3)$  i prvi u fiziku uveo aproksimativne supersimetrije s relaksacijom Paulijeva principa. Prvi je otkrio mikroskopsku podlogu supersimetrija i uveo dinamičke simetrije i supersimetrije za neparno-neparne jezgre.

Nuklearni Wardovi identiteti; u tom području otkrio je egzaktno poništavanje vršnih korekcija i svojstvenih energija za električne kvadrupolne momente i prijelaze, za magnetske dipolne prijelaze i nuklearne transfer reakcije, što daje novu fizikalnu fundaciju pojma efektivnog naboja i efektivnog transfer operatora.

Nuklearna teorija polja; u tom području dokazao je utjecaj izovektorskih modova na niskoležeća stanja, uveo efekte nuklearne teorije polja u dvostepene nuklearne reakcije i razvijao dijagramatske metode.

Izborna pravila; u tom području otkrio je i formulirao izborna pravila: pravilo sume energija —  $B(E2)$ , parabolično pravilo,  $E2/M1$  pravilo u sfernom području i sudjelovao u otkriću izbornog pravila za kvadrupolne momente i pravila za tip vrpce. Formulirao bozonsko-fermionski model neparnih jezgri.

Radovi V. Paara se često citiraju u svjetskoj znanstvenoj literaturi i potaknuli su mnoga druga istraživanja. Za radove u području modela grozdova i vibracija nagrađen je 1975. godine republičkom Nagradom »Ruđer Bošković« za »značajno znanstveno otkriće«.

V. Paar je također bio izrazito aktivan u nastavnim, stručnim i društvenim djelatnostima.

## Znanstveni radovi

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c) *Annals of Physics (Academic Press)*

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